

FLIGHT

The
AIRCRAFT
ENGINEER
&
AIRSHIPS

First Aeronautical Weekly in the World. Founded January, 1909

Founder and Editor : STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

No. 1025. (No. 33. Vol. XX.)

AUGUST 16, 1928

Weekly, Price 6d.
Post free, 7d.

Flight

The Aircraft Engineer and Airships

Editorial Offices : 36, GREAT QUEEN STREET, KINGSWAY, W.C.2.

Telephone : Holborn 3211. Telegrams : Truditur, Westcent. London.

Annual Subscription Rates, Post Free.

United Kingdom .. 30s. 4d. Abroad .. 33s. 6d.*

* Foreign subscriptions must be remitted in British currency.

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"FLIGHT" PHOTOGRAPHS

To those desirous of obtaining copies of "Flight" photographs, these can be supplied, enlarged or otherwise, upon application to Photo. Department, 36, Great Queen Street, W.C.2.

DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list—

1928

Aug. 27-31 U.S. National Baby 'Plane Meeting, Milwaukee

Sept. 10-21 French International Light 'Plane Meeting at Orly

Oct. 7-28 International Aircraft Exhibition, Berlin

Oct. 8 Aero Golfing Soc.—Team Match v. Stage G.C.

Oct. 24 Aero Golfing Soc.—"Cellon" Challenge Cup

1929

Oct. 31 Guggenheim Safe-Aircraft Competition Closes

EDITORIAL COMMENT



It is yet too early to make any attempt to draw lessons from the results of the air manœuvres which, at the time of writing, are being held over Southern England. Up to the time of going to press with this week's issue of FLIGHT but two evenings and nights, of the four or five contemplated, have been completed, and much might happen during the remaining period which would entirely upset any conclusions hastily arrived at from the preliminary skirmishes, so to speak, between "Eastland" and "Westland." Maj. F. A. de V. Robertson is describing the operations of the first two nights in the present issue, and will continue with a full account next week. In the meantime, one or two features of this year's manœuvres have already emerged.

To those who have never taken the trouble to study the Monthly Air Force List (so called officially, although one might respectfully suggest that Royal Air Force Monthly List would be less ambiguous, even the Short-Service Commissions being of more than a month's duration) such squadron numbers as 600, 601 and 605 will convey nothing at all, and yet these numbers represent something in which it is the duty of every citizen to be intensely interested. For the first time in the history of the R.A.F. (this, incidentally, is but the second year these manœuvres have been held) the Auxiliary Air Force squadrons have been permitted to take part, the numbers referred to above representing the City of London Squadron, the County of London Squadron, and the County of Warwick Squadron, respectively.

The man in the street, although he is slowly becoming more and more air-minded, still does not quite grasp the fact that the Auxiliary Air Force is a Territorial Air arm, manned almost entirely by civilians who are "doing their bit" by serving in this manner. Yet it is fairly certain that in the future the Auxiliary Air Force will play an increasingly important part in our air defences, and therefore the fullest appreciation of the early work of these squadrons should be given.

At the moment we do not know what information

the daily press will give its readers concerning the part played in this year's manœuvres by the A.A.F. squadrons, nor how much material the Air Ministry will release, but it seems to us that if, for instance, the public in general were made aware of the fact that Nos. 600 and 601 Squadrons are the City of London and County of London squadrons, whose aerodrome is at Hendon, and which are commanded by Sqdn.-Ldr. the Rt. Hon. Frederick E. Guest and Sqdn.-Ldr. Lord Edward Grosvenor, respectively, Londoners would be much more keenly interested in knowing how these squadrons acquit themselves in the manœuvres, how many of their objectives they reach, what "damage" they are judged to have done, and so forth. Thus John Citizen, and Jane his wife for that matter, instead of regarding these manœuvres as merely a rather interesting spectacle, would have a certain *amour propre* interest in the proceedings.

It should be realised that taking part in such exercises is not entirely devoid of danger, and the fact that the Auxiliary squadrons are taking part this year is an indication that their training has reached a stage where they are fit and capable of doing so effectively. That, in itself, is cause for satisfaction, but it is, we think, necessary to stress the point and to make it quite clear to the general public that these non-regular squadrons are not only carrying out their training by themselves, but are now proving themselves worthy of working with the regular Royal Air Force.

Another feature of the first day's operations was that the fighter squadrons were successful in intercepting the bombing squadrons in a large proportion of instances—eight out of ten to be exact. This refers, however, to daylight "raids." The interception of night raiders is, of course, vastly more difficult; but as far as can be seen at the moment, even in this branch a good deal of progress has been made since last year. Doubtless this is largely due to improvements in what may be termed the ground organisation, such as anti-aircraft guns, searchlights, wireless and other communications, listening posts, etc. And after all, it is to a large extent the object of

the manœuvres to discover how to make the best use of such aids to anti-aircraft defence. As Major Robertson points out, the exercises are not intended to test the defences of London, which are known to be as yet in a very incomplete state. Rather should one regard them as tests of the various units and their working together.

The old controversial question as to whether our single-seater fighters are capable of overtaking and giving battle to some of our fastest bombers still appears to remain unsolved. The bombers are flying light, and it is quite conceivable that at a comparatively low altitude they are able, by diving slightly, to get away from the fighters. At greater heights presumably the bombers would lose performance more rapidly and matters thus be evened up.

❖ ❖ ❖

Going Strong

The flight recently accomplished by Flying Officer P. Murdoch of the South African Air Force must rank among the very finest of recent years. True, it does not compare, in distance covered in the time, with Hinkler's famous flight to Australia on a similar machine, but then that flight is now beginning to emerge as having been something quite exceptional and calling for almost superhuman efforts on the part of the pilot. Murdoch's flight, on the other hand, has been made with the object of proving that an air service to South Africa can be operated all the year around. Leaving London in his Avro "Cirrus-Avian" on July 29, he arrived in Capetown on August 12, having covered the distance of something over 8,000 miles in about 15 days, which gives an average daily mileage of about 550 miles, which is a very excellent figure considering the unfavourable conditions that obtained during a large proportion of the journey. Murdoch has already left Capetown on the return journey, and if all goes well he should be back in England by the end of next week. All will join us in congratulating him on what he has already accomplished, and in wishing him every good fortune during the return flight.

◆ ◆

Liverpool-Belfast Air Service

A REGULAR flying-boat service between Belfast and Liverpool is now considered a more hopeful possibility than was the case eight years ago. Harbour authorities at Belfast and the Finance Minister of Northern Ireland have agreed to co-operate, whilst there have been communications with the Air Ministry outlining the scheme, and indicating what the two cities are prepared to do. There is much satisfaction in Belfast at the prospects of a 90-minute air service to the Mersey. It is suggested that a demonstration service should be tested for the Liverpool Civic Week in October.

Commercial Aviation in Sweden

THE Swedish Aerotransport Company reports record traffic this summer. It can now look back on a record of more than four years of regular commercial flying without a single accident involving loss of life or injury to a passenger. The time-table of the company shows that Sweden is now connected with practically every important centre in Europe as there are now 25 regular flying routes. The principal Swedish daily service is the Malmoe-Amsterdam-Paris-London route, and on that line the machines have carried a full complement of passengers throughout the season. The planes are being increasingly used for the transport of freight, and each machine has regularly carried 600 to 800 kilos of merchandise to Malmoe. Goods carried have been of the most varied character; recently a consignment of 1,100 live chickens were brought from Hamburg and were found to be in excellent condition on arrival.

◆ ◆

Autogiro on Tour

THE programme of the Cierva Autogiro C.8L.2 (Sidleley 180 h.p. Lynx) tour this week includes a visit to Leeds, Newcastle and Renfrew. The pilot is Mr. A. C. H. A. Rawson, and the machine is the same which competed in the King's Cup race. When the tour ends it is possible that a visit to the Continent will follow.

Gipsy-Moth to Compete at Orly Meeting

THE de Havilland Aircraft Co., Ltd., will be represented at the French International Light Plane Meeting at Orly, France, September 10-21, by a Gipsy-Moth, to be flown by Capt. H. Broad.

The Silver Way

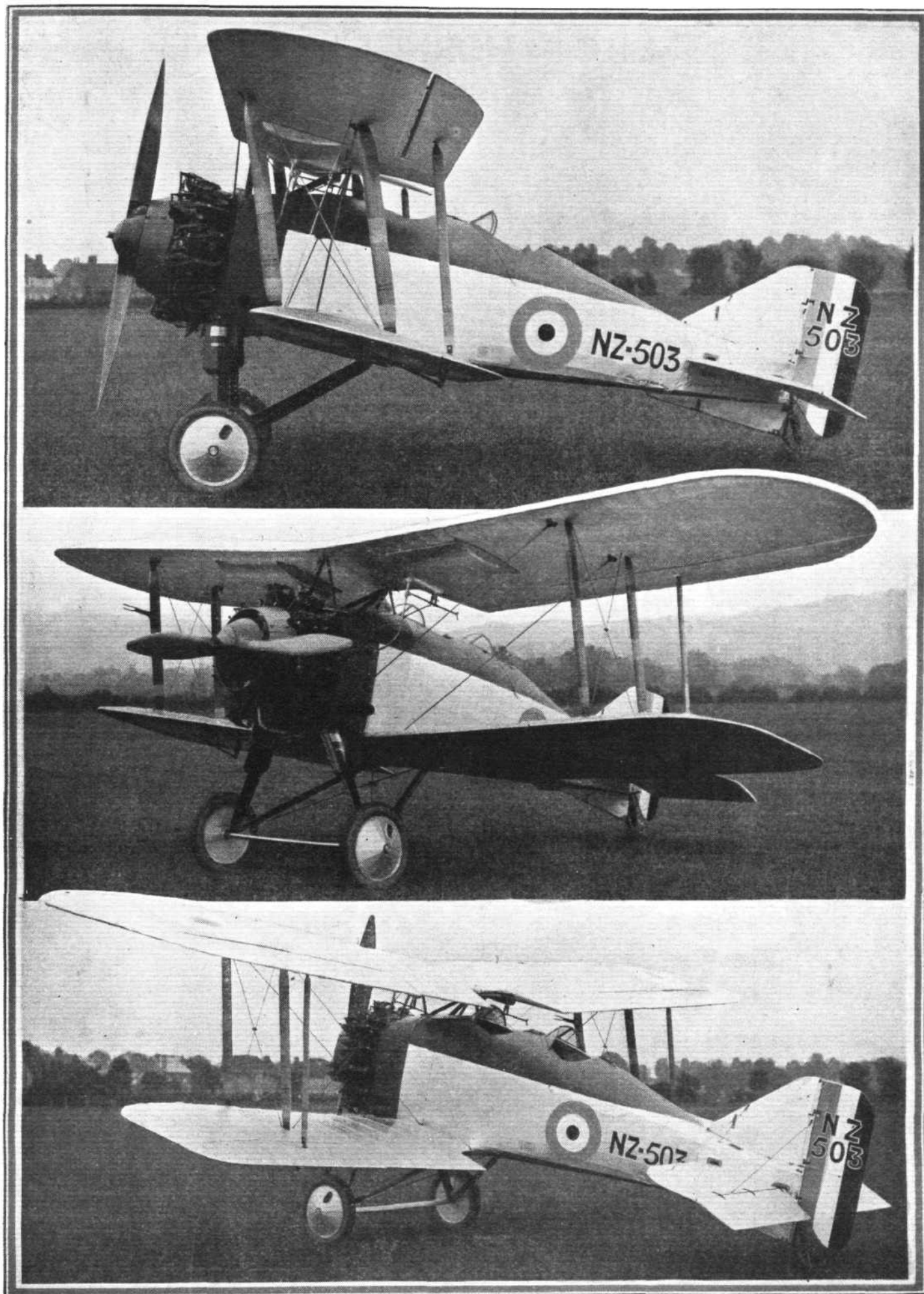
DURING the past thirty days, 19½ tons of silver, valued at £70,000, have arrived at Croydon Aerodrome from Paris in Imperial Airways machines. It is understood that during the next few weeks between 50 and 60 tons of silver will be flown from Paris to London. The pilots of these machines are armed with revolvers.

Costes' Atlantic Flight

CAPT. D. COSTES, the French airman, who flew the South Atlantic with Lieut. le Brix, is about to attempt an Atlantic flight from Paris, accompanied by M. Bellonte.

Air Minister's Flight

SIR SAMUEL HOARE, Minister of Air, accompanied by the Bishop of Chester, flew from London to Brussels on August 8 in an Imperial Airways liner. The 200-miles flight took just over 2 hours.



[" FLIGHT " Photographs]

GLOSTER " GREBES " FOR NEW ZEALAND : These three photographs show the two-seater Gloster " Grebe," Armstrong-Siddeley " Jaguar " engine, of which a batch has been ordered by the New Zealand Government.

(See also page 706.)

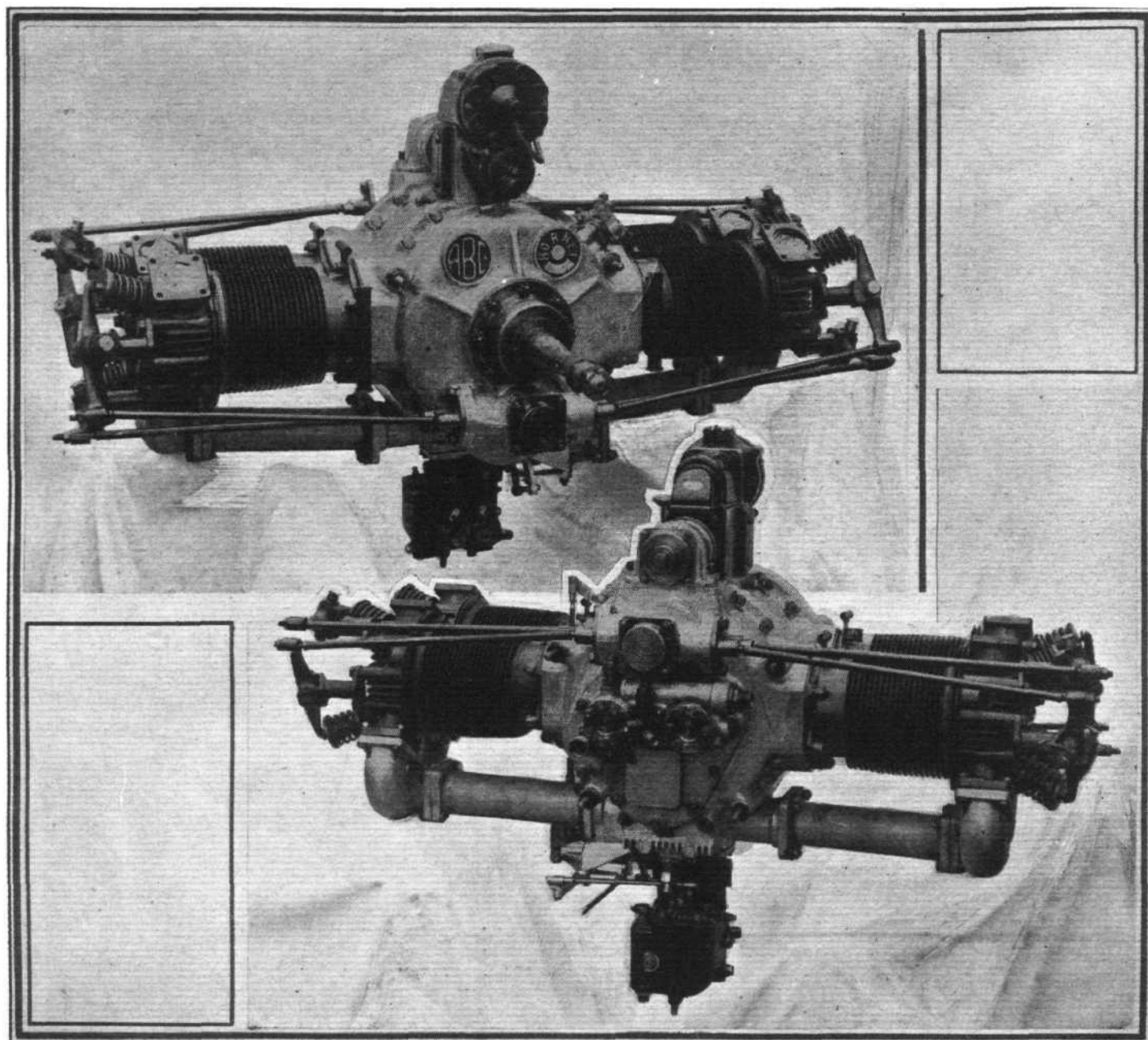
THE A.B.C. "HORNET" ENGINE

75 B.H.P. at 1,875 R.P.M.

A LIGHT 'plane engine of distinctly novel type has, as briefly recorded in *FLIGHT* last week, recently been produced by A.B.C. Motors, Ltd., of Walton-on-Thames. Known as the "Hornet," the new engine may be said to be a development of the smaller type (the "Scorpion") which this firm has had in production for some years, and of which considerable numbers are in use on the Continent, especially in Germany. Like the "Scorpion," the "Hornet" is an air-cooled "flat twin," but with the difference that it has four cylinders instead of two. By retaining the "flat-twin" arrangement, an engine of very low frontal area has resulted, and the mechanical balance of the new engine appears little short of marvellous, although there must be an unbalanced "slewing" couple with two crank throws. When the "Hornet" is running on the test bench one can feel no trace of vibration at all, and a very small spring washer left on the framework of the test bench has remained there for many hours of running. Not only has this washer not been shaken off, but it does not appear to move at all.

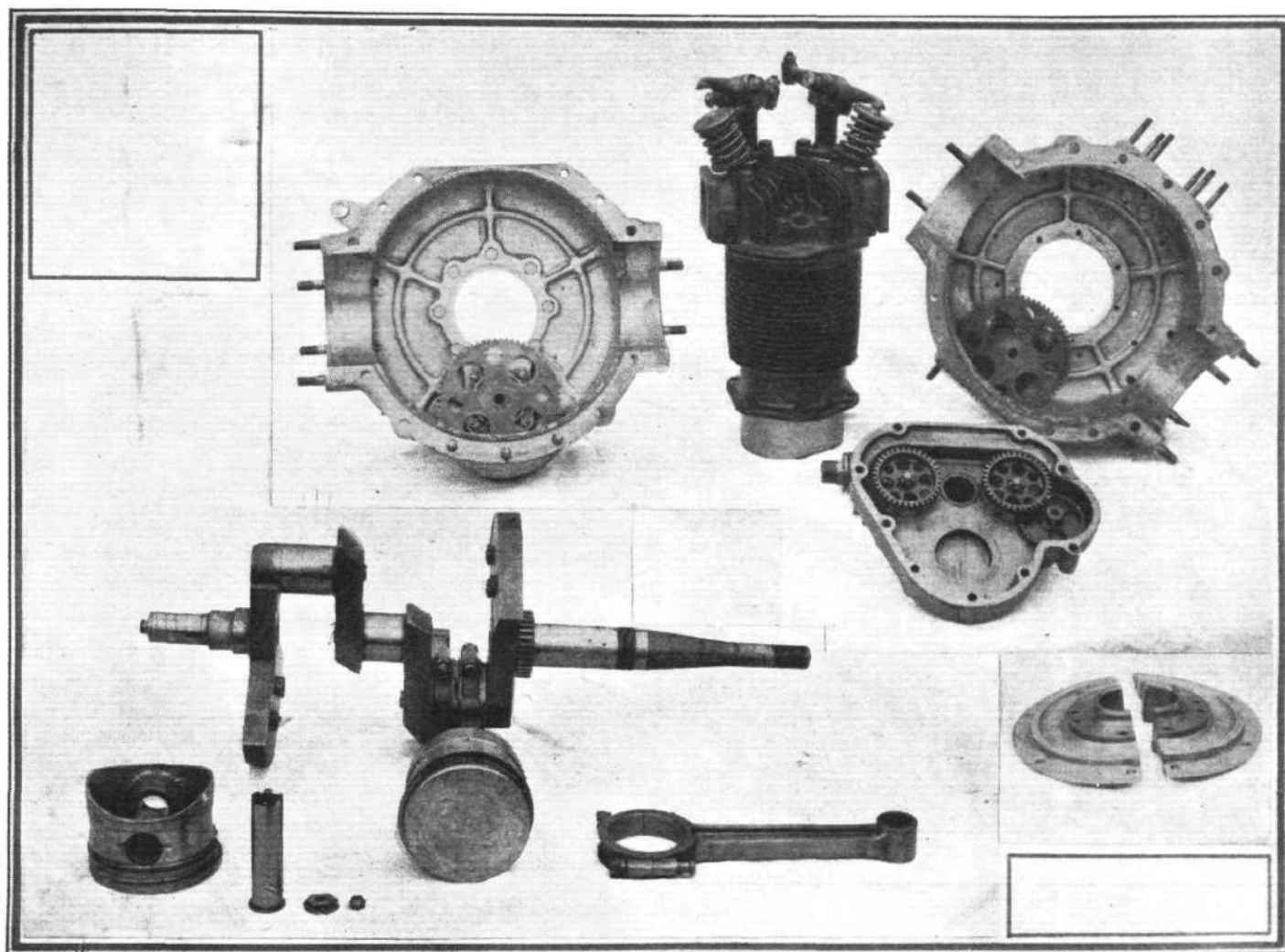
While one would scarcely claim this fact as a very scientific proof of the smoothness of the engine, it does provide a rough and ready demonstration of the entire absence of vibration. True, it still remains to be proved that the "Hornet" is as free from vibration when mounted in an actual aeroplane, but as the Westland Aircraft Works, of Yeovil, have taken delivery of a "Hornet" for the purpose of installing it in a "Widgeon" light 'plane, it should not be very long before the new engine has been thoroughly flight tested. In the meantime, the way in which the "Hornet" has been produced, gone through its Air Ministry type tests, etc., augurs well for its future behaviour as a light 'plane engine.

It was less than a year ago that Mr. Dennis decided to produce a new engine of greater power than the successful "Scorpion," and in the interval the engine has been designed, produced, development-tested and type-tested. This would be no mean achievement for even a large firm, and for a small firm like A.B.C. Motors it is a very creditable performance.



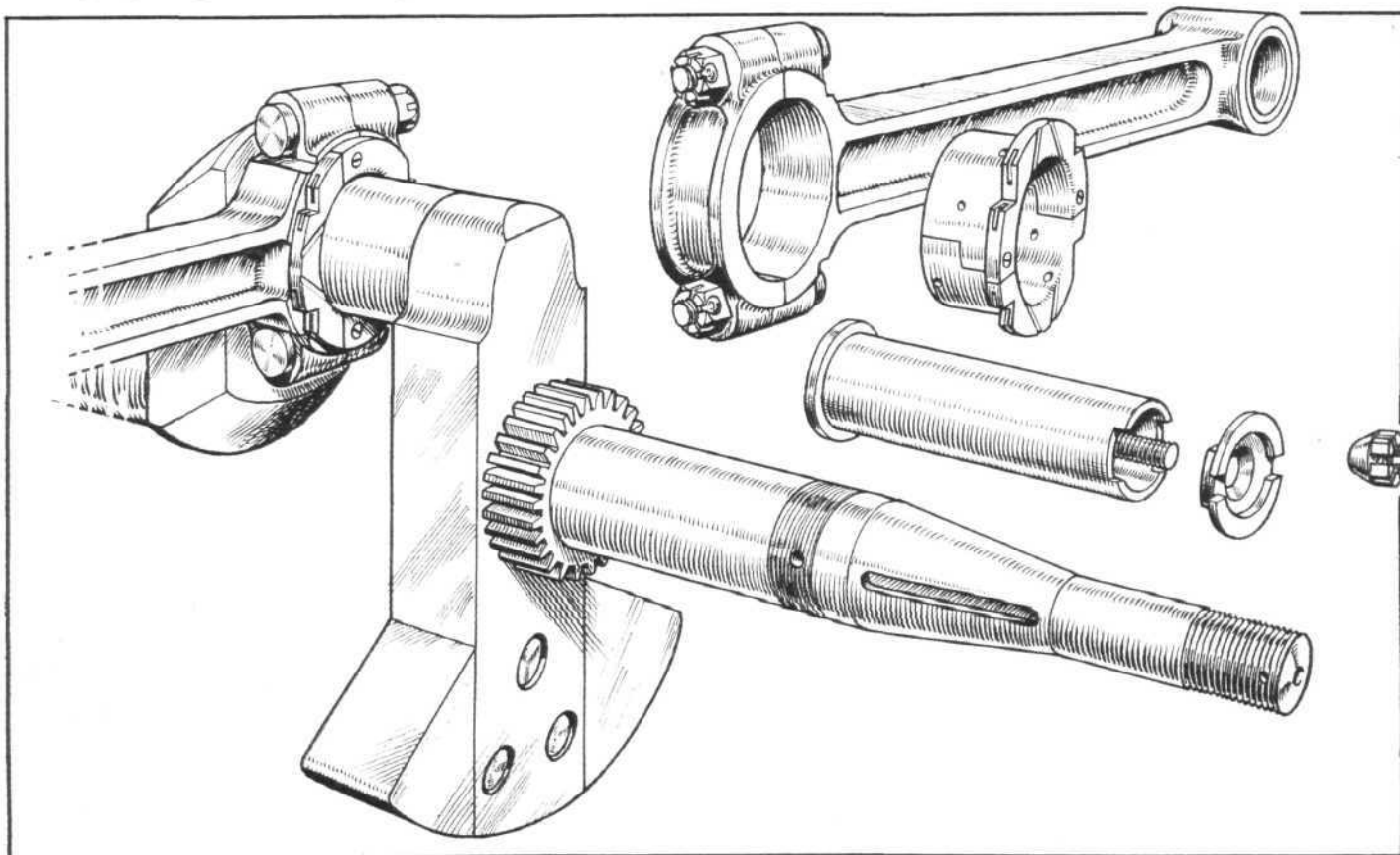
[*"FLIGHT"* Photographs

THE A.B.C. "HORNET" ENGINE : Three-quarter front and three-quarter rear views. Of the 4-cyl. flat-twin type, the "Hornet" has a small frontal area and can be installed very neatly in an aeroplane. The valve gears for front and rear cylinders are placed on front and back respectively of the engine.



["FLIGHT" Photographs]

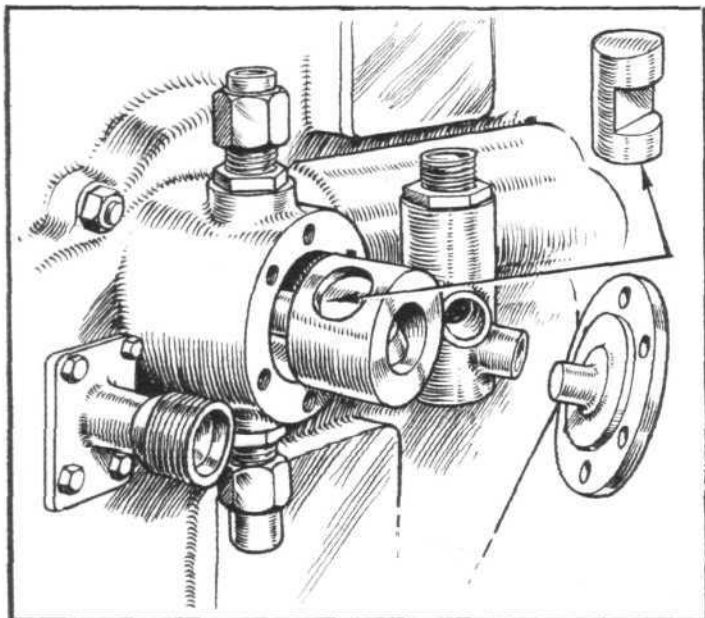
SOME COMPONENTS OF THE A.B.C. "HORNET" ENGINE : Above, the two ends of the crankcase, a cylinder, and the back cover, with oil pump drives. Below, the crankshaft, with pistons, connecting rod and gudgeon pin. On the right, the centre bearing (phosphor-bronze), which is of the split type.



["FLIGHT" Sketches]

THE A.B.C. "HORNET" ENGINE : Some constructional details, showing front portion of crankshaft, with crank throw, balance weight, connecting rod, big-end bush, and gudgeon pin with its locking arrangement.

indeed. How sound the design was from the moment it left Mr. Elliott's drawing board may be gathered from the fact that it was the original engine which, after some 80 hours' development testing at Walton-on-Thames, was submitted to and passed at the very first attempt the Air Ministry's type tests at the Royal Aircraft Establishment at Farnborough. In this connection it is not without interest to record a fact which appears to indicate that the cooling of the "double flat twin" type of engine promises to be remarkably good. The type tests were carried out during the recent hot weather, and at times the temperature in the test house was as high as 102° F. On one occasion the petrol



[\"FLIGHT\" Sketch]

THE A.B.C. \"HORNET\" : Dissected view of one of the oil pumps, with eccentric-operated plunger.

consumption was found to be quite remarkably low, pointing to an obstruction in the carburettor jet, but Mr. Elliott, the designer of the \"Hornet,\" decided to continue the run, and for a whole day the average petrol consumption was 0.488 pints/h.p./hour! On this particular day the thermometer again showed round about 100°, with the intake temperature of 30° C.

Upon completing the Air Ministry type tests, the \"Hornet\" was dismantled, and the following is a record of the actual wear which took place during the type tests:—

Crankshaft—		Wear
Big end pins Nos. 1, 2, 3 and 4	..	Nil
Centre journal ..	..	Nil
Big End Bearings—		
No. 1, 0/Diameter	..	Nil
Bore ..	..	0.00025 inch
No. 2, 0/Diameter	..	Nil
Bore ..	..	0.00025 inch
No. 3, 0/Diameter	..	Nil
Bore ..	..	0.00025 inch
No. 4, 0/Diameter	..	Nil
Bore ..	..	0.00025 inch
Central Journal Bearing—		
Bore ..	..	0.00025 inch
Con. Rod Big Ends—		
Nos. 1 and 2, Bore	..	0.0002 inch
Nos. 3 and 4, Bore	..	0.0003 inch
Con. Rod Small End Bush—		
Nos. 1, 2, 3 and 4	..	Practically none.

Pistons.—These have not yet been decarbonised, but measurements taken show that wear is nil and distortion very slight.

Gudgeon Pins.—No wear at all where fit to piston bosses; 0.0002 inch wear in centre.

Cylinders.—Wear at top, 0.00025 to 0.00075 inch; wear at centre, nil to 0.00025 inch.

Rocker Pins and Bushes.—Practically no wear.

Exhaust Valve Stems.—0.0003 to 0.0007 inch.

Inlet Valve Stems.—0.00025 to 0.0005 inch.

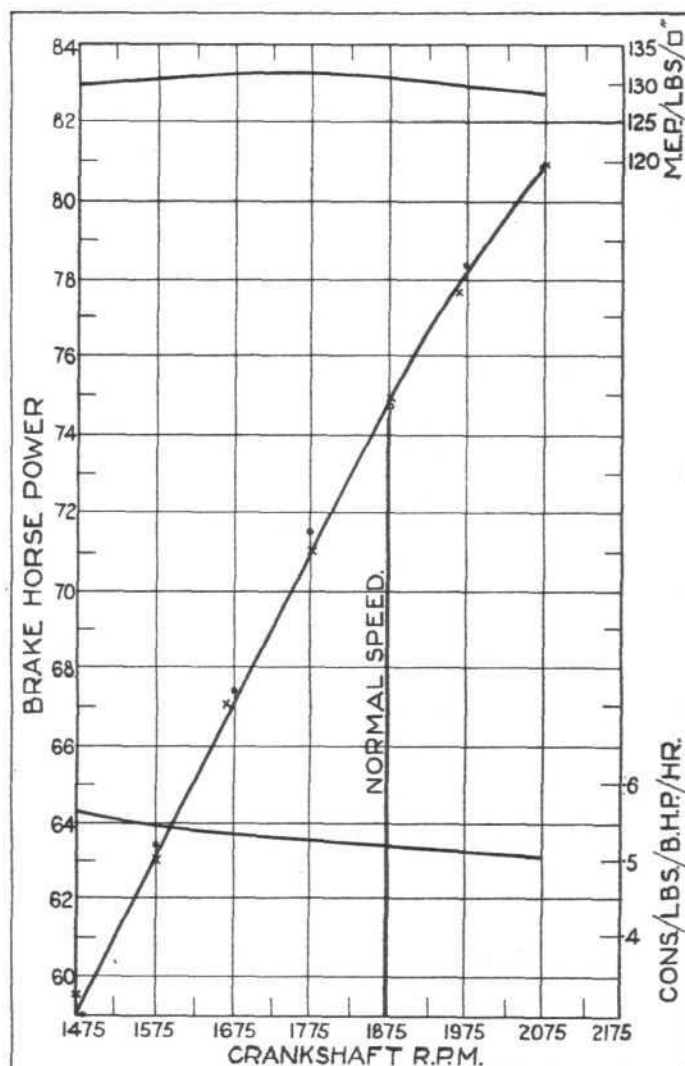
These figures, it will be seen, are very satisfactory and promise long periods of running without overhaul once the engine has been put into production.

General Design and Construction

The aluminium crankcase is of cylindrical shape, and is in three pieces, the joints being vertical, and in line with the cylinders, spigoted and fastened by bolts and nuts. At the bases of the cylinders are four long bolts, two on each side, which run right through the crankcase from front to back and serve for mounting the engine in the aircraft. If desired, it is possible to support the front of the engine from the forward ends of the bolts, as well as from the rear end, but the crankcase is very sturdy and rigid, and probably it will be quite satisfactory to mount the engine from the back only by a plate attached to the rear end of the four mounting bolts.

The front cover of the crankcase houses the short camshaft which operates the valves of the front cylinders, and also the front journal roller bearings and the double thrust ball race. The rear cover contains the two oil pumps, which are formed as a unit, the tachometer drive, and the camshaft for the rear cylinders.

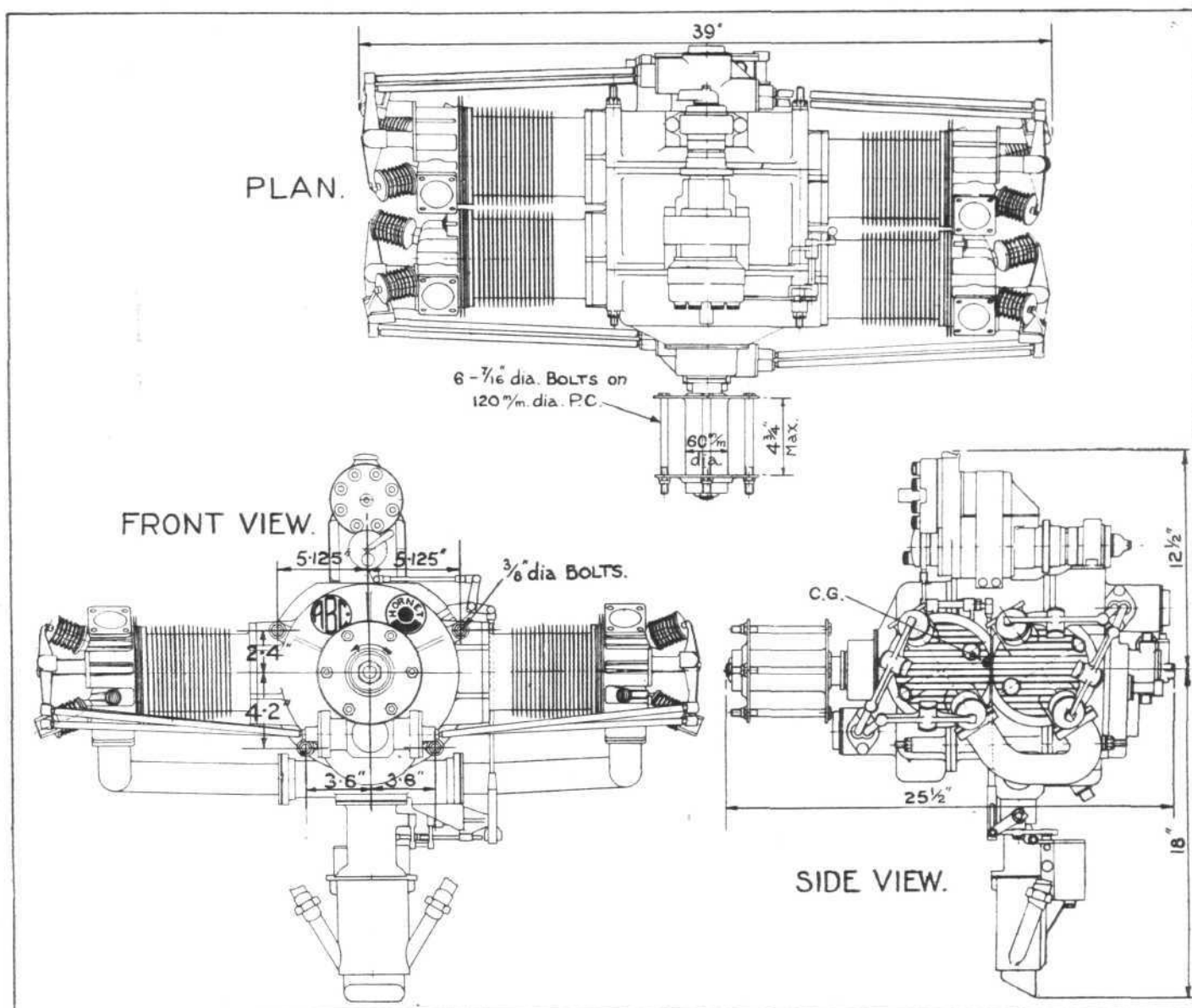
The crankshaft is of the two-throw type, each pin being long enough to accommodate two big-ends side by side. It is carried in three bearings, of which the front and rear journal bearings are of the roller type, while the centre bearing is a plain phosphor bronze bush, split and supported in a circular plate (shown in one of our photographs).



THE A.B.C. \"HORNET\" ENGINE: Power, consumption and M.E.P. curves.

The cylinders are of heat-treated steel, machined from solid, while the cylinder heads are of cast-iron. Incidentally, the cylinder heads are identical with those of the A.B.C. \"Scorpion,\" Mark II, as are also the pistons and certain other parts, so that users of both types of engine have here an advantage in the smaller number of spares which it is necessary to stock. There are two valves per cylinder, operated by push-rods and rockers from the two camshafts on front and back of the engine. As the engine is provided with dual ignition (Watford dual-spark magneto), there are two sparking plugs per cylinder.

Aluminium alloy pistons are used (identical and inter-



THE A.B.C. " HORNET " ENGINE : Three-view drawing, with main dimensions necessary for installation in aircraft.

changeable with those of the " Scorpion "), fitted with fully floating gudgeon pins. The connecting rods are of H section, and the big-ends have plain, fully floating phosphor-bronze bearings, details of these being shown by our sketches. Both the big-end bearings and the centre bearing are force feed lubricated.

The back cover of the engine houses the two oil pumps (pressure and scavenger), which are of the eccentric-operated plunger type, and of equal design and capacity. Provision is also made for fitting a fuel pump if desired, although in most instances direct gravity feed will probably be employed.

The induction system is of very simple type, the manifold being cast integral with the central portion of the crankcase and thus the fuel mixture is heated and the oil cooled at the same time. From the central manifold under the crankcase pipes are taken to each side, with forked pipes conducting the mixture to the separate cylinders.

Main Data

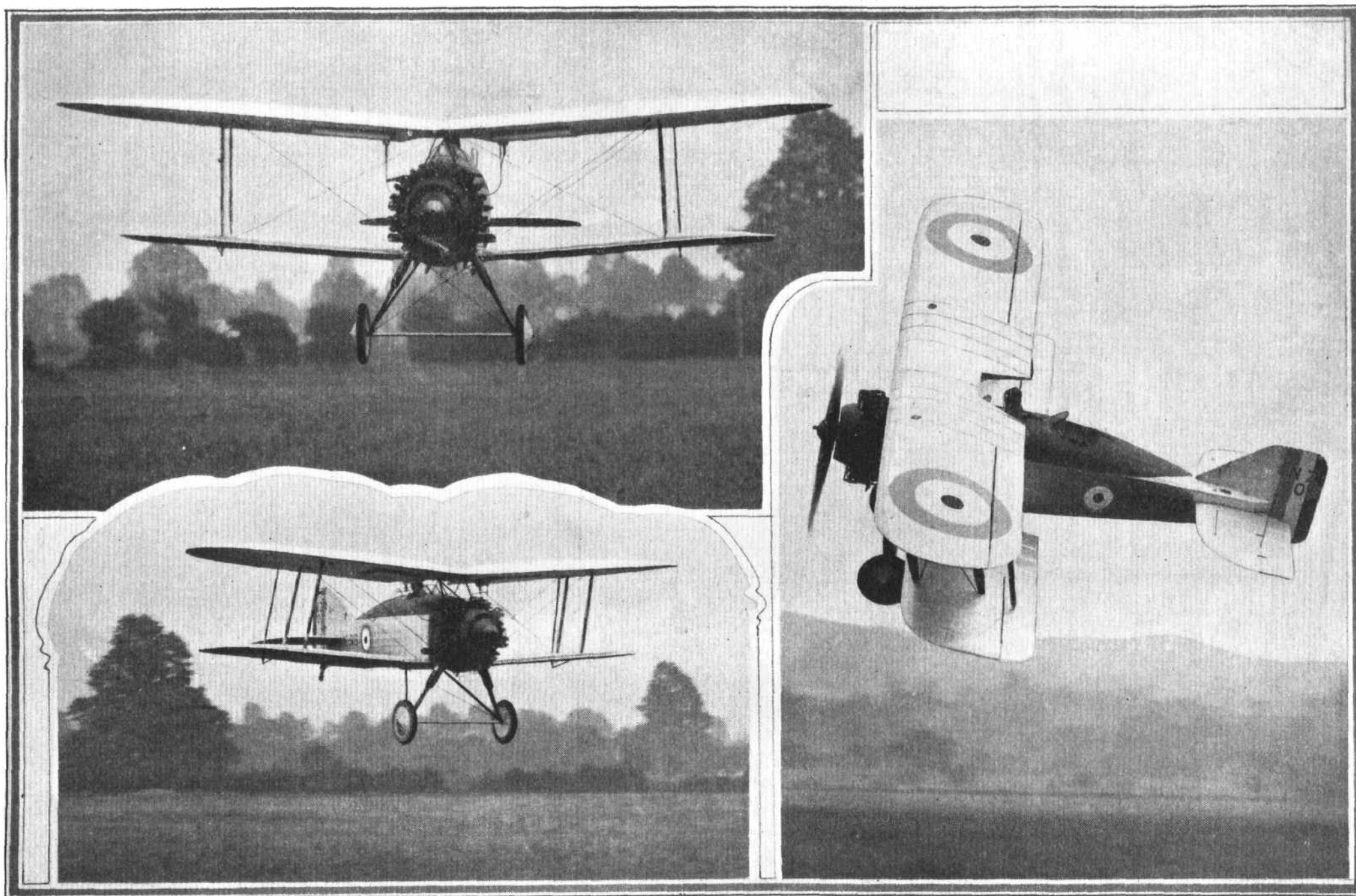
Following are the main data relating to the A.B.C. " Hornet " :

Cylinder bore	4.015 in. (102 mm.).
Cylinder stroke	4.8 in. (122 mm.).
Cubic capacity	243 cub. in. (3,990 c.c.).
Normal power	75 b.h.p.
Maximum power	82 b.h.p.
Normal speed	1,875 r.p.m.
Petrol consumption (80 per cent. aviation spirit, 20 per cent. benzol)	0.53 pts./b.h.p./hour.
Oil consumption	0.035 pts./b.h.p./hour.
Starting	Impulse starter fitted.
Weight of engine complete ..	225 lb. (102.2 kg.).
Specific weight (on normal power)	3 lb./h.p. (1.36 kg./h.p.)

Civil Aviation in Ireland

THE Irish Free State has formed a Department with the purpose of holding an aerial pageant in the second week in September, probably in Phoenix Park, Dublin. Colonel Fitzmaurice, the Officer Commanding the Free State Air Force, is co-operating, and a tentative programme includes air races for ladies, in which Lady Heath, Lady Bailey and Miss O'Brien, all Irishwomen, are expected to compete. Miss Spooner and other English lady pilots are also to be invited, besides the leading English airmen. The English aero clubs are expected to send members to compete. A proposed course is from Phoenix Park, over Dublin Bay, to

Bray and back along the coast-line, a distance of about 25 miles. The Department also hopes to establish air services between Dublin and Cork, Limerick and Galway. The Dublin-Cork and Dublin-Limerick routes would be covered in about 90 minutes, and the Dublin-Galway route within an hour. To test public interest in a proposed flying club in Dublin two machines carried passengers free of charge for ten-minute flights at Phoenix Park, Dublin, on August 10. The announcement that this would take place was only made the evening before, and over one hundred applications were received the following morning. In consequence it has been decided to form a club.



A HUSTLER : One of the Gloster " Grebes " built for the New Zealand Air Force is here seen in flight, piloted by Capt. H. Saint. [" FLIGHT " Photographs (See also page 701.)]

PRIVATE



FLYING

A Section of **FLIGHT** in the Interests of the Private Owner, Owner-Pilot, and Club Member

AERODROMES OF ENGLAND

It seems clear now that aviation in this country can expect the aerodrome and landing field question to be settled in accordance with the insight and ambition of the municipalities, for they appear to be the only authentic authorities who are acquiring and preparing suitable sites for the purpose. Until they complete their self-imposed task, makeshift landing fields must serve the country, which means first that they must be located and recorded—a long task that has already begun and will continue.

A limited enquiry today into the extent that the towns have already tackled the problem is quite encouraging. It

article will be seen maps of the proposed sites for both those seaside towns. The area which Blackpool proposes to purchase contains 539 acres and is 2,970 yards from the centre of the town (or 1.68 miles), and due east of the North and Central Piers. Part of it will be a motor racing track, not for trade testing but for sporting events calculated to draw public interest to motor racing carried out under open road conditions. Rumours have associated seaplane landing facilities in the scheme, but the town's report does not refer to that. It will be noticed on our reproduced map that a mere is marked in the proposed area. Blackpool has already an excellent temporary landing field in Squire's Gate, south of the town, where the recent big air meeting took place.

Skegness, on the Lincolnshire coast line, has not the size or fame as a seaside resort that Blackpool has, but it is very much alive to its future and the part that aircraft can play in it. Mr. R. J. Jenkins, the town's Engineer and Surveyor, says that his Council has long realised that aviation will revolutionise seaside resorts, and in view of the growing light aeroplane movement in Nottingham and the intimacy between that town and Skegness, they want to give landing facilities to Nottingham air travellers.

They are looking forward to the time when the resort could be a dormitory town to Nottingham, and it was for these reasons that in their town planning scheme provision has been made for reservation of a landing ground. Lord Scarborough, who is the owner of the land, has been consulted and is generally favourable to the idea, whilst the Air Ministry, too, has reported favourably on the project. The Council is now negotiating with Lord Scarborough more intimately with a view to the aerodrome being put in use at a comparatively early date. It is 1 mile 264 yards west of the pier, 640 yards long on W. side, 760 yards on S. side, 294 yards on E. side, and 580 yards on N. side.

Maidstone Town Council has scheduled Mote Park as an open space in the town planning scheme with a view to its use as an aerodrome.

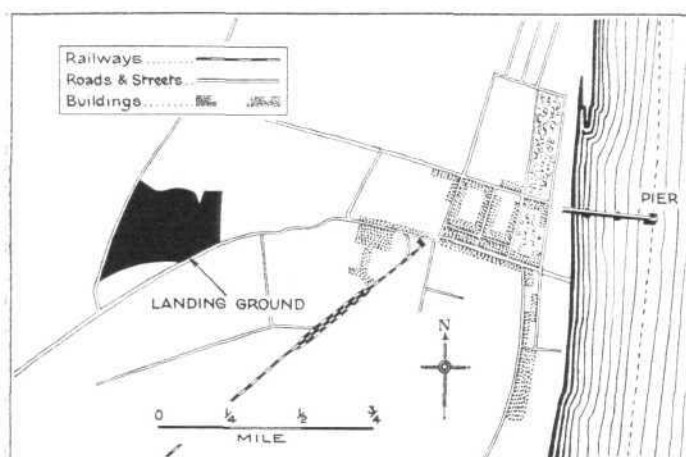
is in fact difficult to find many towns which have turned up their municipal noses at the idea. We do see reports of some councillors publicly denouncing the terrible modern notion of harnessing the town with an aerodrome, and it is often simultaneously observed that their objections are purely personal ones. They object to the noise of aero engines, for instance. One could readily have sympathy with that reason but doubt whether it is quite valid in these days of eternal outrageous noises. Hundreds of streets are filled with racket today, against which aircraft engines can never hope to make themselves heard.

Purely incidentally, it has been noticed by the writer how little do people who live close to aerodromes complain of undue disturbance. At first very low descents over the chimney pots stir a nomadic desire, but when it is realised that pilots do not risk their luck with chimney pots as a habit the life becomes quite bearable, if not interesting. Terrestrial traffic is a far greater nuisance, both for noise and vibration. Councillors who do object for purely personal reasons provoke the quiet reflection that in these democratic days we change our councillors.

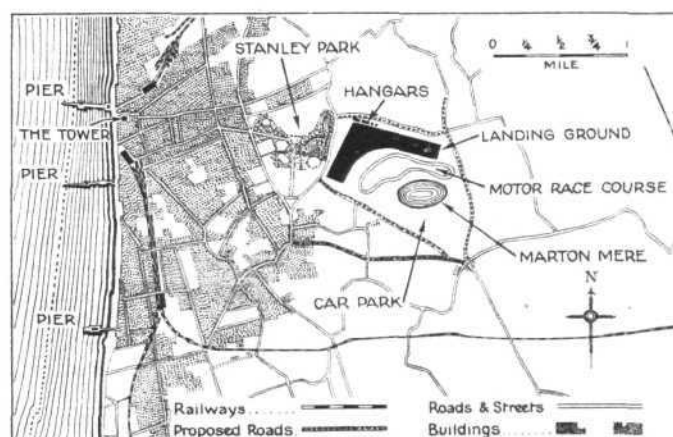
Most towns have investigated the aerodrome question seriously, for which much credit must go to the pioneering industry of Sir Alan Cobham, who sent out literally hundreds of letters on the subject in the British Isles and in many cases he followed up with personal visits and gave his advice on the choice of suitable sites. This provoked widespread interest, and now many towns have communicated with the Air Ministry for further guidance, which has been readily forthcoming.

Belfast, we believe, has the honour of being the first town in Great Britain to possess a municipal aerodrome.

Blackpool looks as though it will be well in front in this country, with Skegness a keen runner-up. With this



Proposed site for the Blackpool Municipal Aerodrome and motor racing track, which is 539 acres in extent, and 2,970 yards from the centre of the town. As the former it will be one of the first of its kind in England.



Proposed site for the Skegness Municipal Aerodrome, which is likely to be in use shortly, if present negotiations with Lord Scarborough, the owner of the land, are satisfactory. Lord Scarborough is favourable towards the scheme. The approximate distance from the Pier is 1 mile 264 yards.

Hull has a ground in preparation as part of the new Hull University grounds.

Leeds has gone ahead rapidly now. Sir Alan Cobham was engaged to report on several sites and an Air Ministry report is now awaited.

LIGHT 'PLANE CLUBS

London Aeroplane Club, Stag Lane, Edgware. Sec., H. E. Perrin, 3, Clifford Street, London, W.1.
Bristol and Wessex Aeroplane Club, Filton, Gloucester. Secretary, Capt. C. F. G. Crawford, Filton Aerodrome, Patchway.
Hampshire Aero Club, Hamble, Southampton. Secretary, H. J. Harrington, Hamble, Southampton.
Lancashire Aero Club, Woodford, Lancs. Secretary, C. J. Wood, Oakfield, Dukinfield, near Manchester.
Midland Aero Club, Castle Bromwich, Birmingham. Secretary, Maj. Gilbert Dennison, 22, Villa Road, Handsworth, Birmingham.
Newcastle-on-Tyne Aero Club, Cramlington, Northumberland. Secretary, J. T. Dodds, Cramlington Aerodrome, Northumberland.

Norfolk and Norwich Aero Club, Mousehold, Norwich. Secretary, G. McEwen, The Aerodrome, Mousehold, Norwich.
Nottingham Aero Club, Hucknall, Nottingham. Hon. Secretary, Cecil R. Sands, A.C.A., Imperial Buildings, Victoria St., Nottingham.
The Scottish Flying Club, 101, St. Vincent Street, Glasgow. Secretary, Harry W. Smith.
Southern Aero Club, Shoreham, Sussex. Secretary, C. A. Boucher, Shoreham Aerodrome, Sussex.
Suffolk Aeroplane Club, Ipswich. Secretary, Maj. P. L. Holmes, The Aerodrome, Hadleigh, Suffolk.
Yorkshire Aeroplane Club, Sherburn-in-Elmet, Yorks. Secretary, Lieut.-Col. Walker, The Aerodrome, Sherburn-in-Elmet.

LONDON AEROPLANE CLUB

FLYING return for the month of July.—Total flying time, 200 hrs. 45 mins. Dual instruction, 71 hrs. 40 mins.; solo flying, 97 hrs. 45 mins.; passenger flights, 16 hrs. 10 mins.; test flights, 15 hrs. 10 mins.

Flying return for the twelve months ending July 31, 1928.—Dual instruction: Flights, 1,552; 656 hrs. 35 mins. Solo flying: Flights, 1,251; 547 hrs. 5 mins. Passenger flights: Flights, 267; 97 hrs. 15 mins. Test flights: Flights, 651; 112 hrs. 55 mins. Total: Flights, 3,721; 1,413 hrs. 50 mins.

REPORT for week ending August 12.—Flying time, 45 hrs. 10 mins. Dual instruction, 30 hrs. 55 mins.; solo flying, 14 hrs. 15 mins.

Dual instruction:—G. R. Mack, W. Hart, G. R. S. Charles, J. C. V. K. Watson, H. Bergel, R. F. G. Adams, J. Harrison, Miss Johnson, R. M. Doidge, Capt. R. S. Rattray, S. G. Blythe, Mrs. Davis, W. W. Briscoe, J. Chalmers, R. K. Koratkar.

Solo flying:—J. J. Hofer, E. H. Thierry, P. A. Wills, C. Campbell, J. C. V. K. Watson, H. M. Samuelson, W. L. M. O'Connor, B. Davis, W. Roche-Kelly, R. Sanders-Clark, C. E. Murrell, Maj. K. M. Beaumont, E. A. Lingard. E. H. Thierry passed his tests for his Aviator's Certificate on August 5.

Staff Holidays.—The club is closed down from August 14 to 25, both days inclusive. Monday Closing.—Members are informed that in future there will be no flying at the club on Mondays.

Mr. F. R. Matthews, one of the club instructors, is getting married this month. It has been suggested that members might wish to subscribe to a wedding present. Subscriptions, limited to 10s., may be sent to the Secretary, 3, Clifford Street, London, W.1.

BRISTOL & WESSEX AEROPLANE CLUB, LTD.

REPORT for week ending August 11.—Total flying time, 43 hrs. 25 mins. Instruction (dual), 20 hrs. 5 mins.; instruction (solo), 5 hrs. 20 mins.; licensed pilots, 7 hrs. 35 mins.; passengers (22 flights), 7 hrs. 55 mins.

Instruction (under Mr. Travers):—Miss Miles, Messrs. Allinson, Greenhill, Davies, Amory, Singh, Neale, Peters, Lynas, Hibbert, Rodgers, R. Clarke, T. H. Clarke, Putnam. (Under Mr. Tratman):—Messrs. Lynas, Amory, Allinson, Heaven, Singh. (Under Mr. Culverwell):—Messrs. Allinson, Amory, Neale, Singh, Lynas, Peters, T. H. Clarke, Rodgers.

Mr. D. H. Amory joined the ranks of the first soloists this week.

Mr. Travers and Mr. Keith-Jopp, the former with Mr. Lynas as passenger, flew in formation to Tangmere on Monday, the 6th instant. There they left Mr. Lynas and went on to Lympne, returning in the evening, Mr. Travers having picked up Mr. Lynas at Tangmere on the way back.

Mr. Downes-Shaw flew his private Moth G-EBST back from Stag Lane on Saturday afternoon.

CINQUE PORTS FLYING CLUB

REPORT for week ending Saturday, August 4.—Machine: de Havilland "Moth" G-EBSS. Total flying time, 18 hrs. 50 mins. Test flights, 60 mins. Joy rides with Maj. Clarke:—Mr. Walsh, 15 mins.; Miss Walsh, 10 mins.; Mr. Parks, 30 mins.; total, 55 mins.

Dual instruction (with Maj. Clarke):—Mr. Walsh, 2 hrs. 15 mins.; Mr. Skinner, 2 hrs. 15 mins.; Mr. Crowther, 5 hrs. 15 mins.; Mr. Swinnard,

45 mins.; Mr. Read, 1 hr.; Miss Moffat, 30 mins.; Capt. G. E. Took, 30 mins.

Soloist:—Mr. Crowther, 4 hrs.

"A" pilot:—Mr. Edgson Wright, 45 mins.

During this week the club set up a record which will take a lot of beating. Mr. Crowther, of Eastbourne, wished to learn to fly as quickly as possible before sailing for Kenya. He joined the club on Friday, July 27, and began his instruction on that day. He was unable to fly on the Saturday and Sunday, but resumed instruction on the Monday, and on Tuesday, July 31, he flew solo after only 4 hrs. 45 mins. dual instruction. On the next 2 days he put in 3 hrs. 30 mins. solo flying and a further half hour's dual, and on Friday, August 3, exactly a week from the time he started, he passed his tests for his "A" licence, in very bad and gusty weather, putting up a most excellent show. Mr. Crowther had had no previous experience of flying, and his performance should convince the sceptics that flying is not so difficult as it is made out to be. We suggest that more people might spend a fortnight of their holidays on learning to fly, with advantage to themselves.

The aerodrome is now very busy with the auxiliary squadrons in camp there, and crowds of people have been lining the roads to watch the flying.

REPORT for week ending Saturday, August 11.—Total flying time, 19 hrs. 30 mins. Test flights, 45 mins.; joy rides with Maj. Clarke, (Nine): 2 hrs.

Dual instruction (with Maj. Clarke):—Mr. Read, 30 mins.; Mr. Walsh, 1 hr. 15 mins.; Mr. Skinner, 3 hrs. 15 mins.; Mr. R. Dallas Brett, 30 mins.; Mr. Gunner, 15 mins.; Mr. Evernden, 15 mins.; Mr. Parks, 1 hr. 45 mins.; Mr. Smith, 1 hr.; Mr. Swinnard, 30 mins.; Mr. W. Smith, 1 hr.; Mr. Crowther, 30 mins.; Mr. Boys, 30 mins. Total, 11 hrs. 15 mins.

"A" Pilots.—Mr. Wright, 1 hr. 15 mins.; Mr. R. Dallas Brett, 30 mins.; Mr. Crowther, 3 hrs. 30 mins.

With 12 members under instruction, we put in a very busy week, totalling 19 hrs. 30 mins. flying with our one machine. Mr. Crowther, who last week took his "A" licence after only 6 days' flying instruction, managed to get in 30 mins. dual and 3 hrs. 30 mins. solo during this week before sailing for Kenya. His departure is a distinct loss to the club, but no doubt the Aero Club of East Africa will benefit from his activities. We wish him the best of luck.

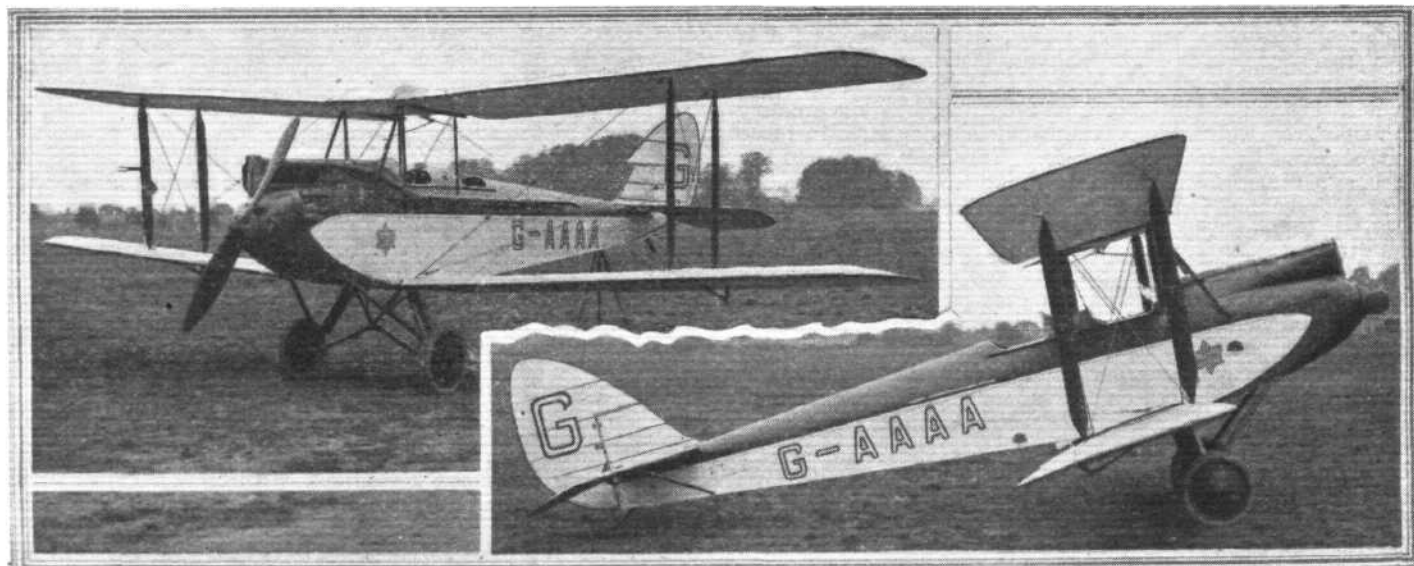
On Saturday, August 11, we had a very welcome visit from de Havillands, represented by Messrs. Malcolm, Cook, White and a friend, and from A.D.C., in the person of Mr. Neville Stack, whose well-known white and red "Moth" was fitted with the new Cirrus mark 3 engine.

EDINBURGH AERO CLUB

Owing to lack of sufficient funds the Edinburgh Aero Club has not yet got going at Turnhouse Aerodrome. More's the pity, as the good weather will shortly be at an end. I am assured, however, that the club will yet overcome the difficulties that are especially the portion of the unsubsidised club, and that it will do its founders credit.

Apart from the club there are other aerial activities on foot in the Scottish capital—a flying school and an aero company among them. Those who are behind the scenes believe that once the City of Edinburgh becomes "air-minded" the rest of Scotland will speedily fall into line.

AVIATION DISPLAY:—A flying pageant on a small scale was staged at



["FLIGHT" Photographs]

THE LATEST TYPE "GIPSY MOTH": The first of what may be termed the standard "Gipsy Moth" has been bought by Captain Geoffrey de Havilland, who is at present on holiday in the machine, accompanied by Mrs. de Havilland. Features of the new type are the neat cowling of the D.H. "Gipsy" engine, the new type of undercarriage, which has a wide track and a long travel, and the comfort of the cockpits, as well as a very large luggage compartment. The long exhaust pipe makes for very silent running.

Darnhall, Eddleston, Peeblesshire, on 8th inst., in connection with an appeal for funds by the League of Mercy. Lady Heath was unfortunately not able to attend owing to illness. Miss Winifred Spooner, accompanied by her brother Captain Spooner, flew from London in order to attend; and Captain Jones, chief instructor to the Scottish Flying Club, Renfrew, flew over, as also did Mr. H. R. Murray Philipson, Stobo Castle—a trio of D.H. Moths. The Master of Sempill was prevented, owing to unfavourable weather conditions from taking off from Gladhouse Reservoir in his single-seater seaplane, but he addressed those present on aviation, using Miss Spooner's plane as a platform.

This week the Autogiro, which began a series of demonstration flights from Northolt aerodrome on Tuesday, is continuing its tour up the East Coast. Leeds, Edinburgh and Glasgow will be visited, and then the machine will proceed southward along the West Coast, calling at Liverpool and Manchester.

LANCASHIRE AERO CLUB

REPORT for week ending August 4.—Flying time, 32 hrs. 15 mins. Instruction, 16 hrs. 45 mins. Solo flights, 10 hrs. Passenger flights, 3 hrs. 55 mins. Tests, 1 hr. 35 mins.

Instruction.—With Mr. Baker: Messrs. Slack, Weale, Kay, Greenhalgh, Ashworth, Stross, Cundiff, Cheyne, Garner, Eckersley, Allott, Faulkner, Misses Hill, Baerlein, Emery.

With Mr. Cantrill: Messrs. Greenhalgh, Faulkner, Greg, Ashworth, Taylor, W. Whitehouse, Gort, Eckersley, Goss, Kay, Serck, Lacayo, Mason, Cundiff, Barlow, Stern, Misses Baerlein, Emery.

With Mr. Scholes: Messrs. Nuttall, Caldecott, Elwell, Taylor, W. Ashworth, Serck, Barlow, Davies, D. B. Cundiff, Faulkner, Cheyne, Williamson, Davies, R. G. Leeming.

Soloists (under instruction): Messrs. Riley, Sellers, Garner, Harrison.

Pilots: Messrs. Meads, Caldecott, Crosthwaite, Lacayo, Mills, Fallon, Agar, Gort, Chapman, Elwell, Gerrard, Gattrill, Nelson, Michelson, Leeming.

Passengers.—With Mr. Goodfellow: Miss Briggs, Mrs. Briggs; D. R. Goodfellow. With Mr. Hall: Messrs. Davies, Williamson, Hulme. With Mr. Cantrill: Messrs. Lister, Pilling, Lawton, Scotson. With Mr. Lacayo: Mr. F. Scholes. With Mr. Michelson: Mr. May. With Mr. Meads: Messrs. Goss, Hulme. With Mr. Agar: Mr. Barnes. With Mr. Leeming: Mr. Dyson.

REPORT for week ending August 11.—Flying time, 31 hrs. 30 mins. Instruction, 13 hrs. 25 mins. Solo flights, 10 hrs. 40 mins. Passenger flights, 6 hrs. 15 mins. Tests, 1 hr. 10 mins.

Instruction.—With Mr. Cantrill: Messrs. R. G. Davies, Williamson, D. B. Davies, Cundiff, Goss, Lister, Faulkner, Butt, Greg, Lacayo, Mills, D. Nelson, Hartley, Eckersley, Hall, Greenhalgh, Barlow, Serck, Whitehouse, Kay, Ashworth, Miss Emery. With Mr. Scholes: Messrs. Cheyne, Stern, Nuttall.

Soloists (under instruction): Messrs. Gort, Serck, Riley, Cundiff, Tweedale. Pilots: Messrs. Chapman, Hardy, Leeming, Gattrill, Lacayo, Butt, Hall, Nelson, Agar, Mills, Harrison, Meads.

Passengers.—With Mr. Meads: Messrs. Goss, Kay, Mrs. Mills. With Mr. Leeming: Miss Gumuchian, Messrs. Rodda, Scholes. With Mr. Scholes: Messrs. Downham, F. Scholes, Mrs. Nuttall. With Mr. Hall: Messrs. Lindsay, Williamson, Ashworth. With Mr. Cantrill: Mrs. Ainsworth, Messrs. Ball, Hepworth. With Mr. Cantrill: Messrs. D. R. Goodfellow, Coutts. With Mr. Lacayo: Messrs. Gort, Fleming, Miss Lacayo. With Mr. Twemlow: Mr. Growcott.

Messrs. Serck and Cundiff both did very successful first solos. The aerodrome is closed for staff holidays until Saturday, August 25.

LIVERPOOL & DISTRICT AERO CLUB

REPORT for week ending August 5. Total flying, 36 hrs. 40 mins. Dual, 27 hrs. 35 mins.; solo, 9 hrs. 5 mins. "A" Pilots:—Crosthwaite, Davison, Leete, Ward.

Dual (with Lieut. Bentley):—Messrs. Andrews, Irving, McClure, Miss Hughes, Miss Oakshott, Messrs. Francis, Naylor, Edgar, Mitchell, Barber, Birtill, Spark, Reville, Barker, Thornton. (With Lieut. Allen):—Messrs. Keniston, Benson, E. H. Williamson, Thornton, Barnes, McGeagh, Mrs. Naylor.

Solo:—Benson, McClure.

Joy rides (with Lieut. Bentley):—Mrs. Keenan, Miss Hackforth. (With Mr. Davison):—Mr. Howell. (With Mr. Ward):—Mr. Alcock.

The winner of our height judging competition, Mr. Viner, called at the aerodrome on Wednesday evening for his flight, and was given his "Baptême de l'air" by Lieut. Bentley. The Cornwall Aviation's Banner Flying Avro paid us a visit, also Mr. Short on the Short Mussell fitted with undercarriage, a very interesting machine. Unfortunately, Mr. Short called on a Monday, our "off" day, so few members had an opportunity of examining his machine.

NEWCASTLE-UPON-TYNE AERO CLUB

REPORT for week ending August 5, 1928.—Total flying time, 33 hrs. 5 mins. Instruction, 4 hrs. 5 mins. "A" Pilots, 16 hrs. 40 mins. Solo training, 1 hr. 25 mins. Passenger, 9 hrs. 45 mins. Tests, 1 hr. 10 mins.

Instruction (with Mr. J. D. Parkinson).—Messrs. Hayton, Lawson, Hall, Kenderick, Dickinson, Middleton, and Stevenson.

"A" Pilots.—Mrs. Heslop, Messrs. Irving, Phillips, C. Thompson, R. N. Thompson, H. Ellis, W. B. Ellis, Turnbull, De Pledge, Runciman, Horn, Stevenson, Heppell, Wilson, Dr. Dixon, and Dr. Alderson.

Solo.—Mr. Moore.

Passengers (with Mr. Parkinson).—Mrs. Gregorson, Miss Runciman, Miss Terry, Messrs. Humble, Dodds, Thompson, John Bell, Bulmer, Robson, Anderson, Milburn, Leete.

On Thursday last, an entertaining hour was spent in taking into the air five young ladies, in connection with the Air League Scholarship. Out of this number, two have been selected to undergo instruction, and they will commence this week.

On Sunday, Mr. Wallace, on his Moth "PM," called on his way to Renfrew. Our successes at the Flying Meetings this year has resulted in the Club being awarded the S.B.A.C. Trophy.

REPORT for week ending August 12.—Total flying time, 24 hrs. Instruction, 6 hrs. 40 mins. "A" Pilots, 12 hrs. 5 mins. Solo Training, 55 mins. Passenger, 4 hrs. 10 mins. Test, 10 mins.

Instruction (with Mr. J. D. Parkinson).—Miss Vendall, Messrs. H. Ellis, I. Thompson, F. Hall, W. H. Hall, L. Middleton, Dodds, Walker, R. G. Lawson, Griffiths.

"A" Pilots.—Mrs. Heslop, C. Thompson, Dr. Dixon, Dr. Alderson, Turnbull, H. Ellis, W. B. Ellis, R. N. Thompson, Stawart, De Pledge.

Solo.—Messrs. Moore and Hall.

Our visitors this week included Miss Spooner, and Mr. Wallace, on Moths. The forthcoming visit of the Autogiro is causing great comment, and we hope



[“FLIGHT” Photograph]

THE “GIPSY MOTH” IN FLIGHT: Captain G. de Havilland and Mrs. de Havilland starting off on their holiday trip to Cornwall.

that the weather will improve sufficiently to allow of its safe arrival, as high winds during the past week have seriously interfered with flying.

NORFOLK & NORWICH AERO CLUB

REPORT for week ending August 12.—Total flying time, 35 hrs. 35 mins. Instruction.—With Mr. Young: Mrs. H. J. Cator, Messrs. C. Land, F. Rinder, E. Evans, C. Ransome, H. Malcolm Smith, A. Cooper, C. Bougret, D. Corsellis, A. J. Richardson, A. Kirkby.

Soloists: Messrs. T. Image, A. G. Lofty, H. Cator, G. Barker, A. G. Marshall, C. C. White, E. Varden Smith, F. Gough, R. Moore, E. Lambert, N. Brett, R. T. Harner, P. D. Oliver, W. A. Ramsay. Passengers, 33.

The chief attraction for the week was a visit from the Autogiro, when several of our members were given trial flights. It is certainly an extraordinary machine and, judging from its remarkable performance, should have a future before it. We have four more members now completed tests and waiting for their licences; also there are flying members joining daily, which is most cheering. The club was open on Bank Holiday and was very well patronised, two machines being kept busy almost all day. We are very grateful indeed to Mr. Bolingbroke of the Stranger's Hall, Norwich, for a very excellent gift of 10 bound volumes of *FLIGHT*, dating from 1909 to 1918. These we find most interesting and much appreciated by our members.

NOTTINGHAM AERO CLUB

REPORT for week ending August 10.—Flying time, 39 hrs. 30 mins. Dual instruction, 11 hrs. 5 mins. Solo "A" Pilots, 6 hrs. Solo under instruction, 15 hrs. 10 mins. Passengers, 5 hrs. 50 mins.

Dual instruction (with Mr. Martin).—Miss Bostock and Messrs. Calladine, Bradley, Stevenson, Taylor, Thorpe, Shipside, and Glenn.

Solo "A" Pilots.—Messrs. Blake, Paul, Pilgrim, Hallam, and Cox. Solo (under instruction).—Messrs. Taylor, Bradley, Shipside, Hatton, Glenn, Selvey, and Chawla.

Passengers (with Mr. Martin).—Miss Simms and Messrs. Hutchinson, Hatton, and Kay; (with Mr. Blake): Dr. King; (with Mr. Hallam): Mrs. Hallam.

Mr. Chawla was launched on his first solo on Monday last, and put up a real good show. He hails from India, where he is returning as soon as he gets his "A" Ticket. We also have our well-known friend, Capt. L. R. Tait-Cox, among us for a while, with his sky-writing S.E.S.A., but the weather is none too good. The Autogiro arrived on Saturday, piloted by Mr. Rawson, who gave a very interesting exhibition before a good number of members and the public. Mr. Martin had a flight in same, and flew it, and was greatly impressed by the whole outfit.

YORKSHIRE AEROPLANE CLUB

REPORT for week ending August 11.—Flying time, 26 hrs. 25 mins. Dual, 11 hrs. 35 mins. Solo, 12 hrs. Passengers, 2 hrs. 50 mins.

(Instruction with Capt. Beck).—Miss Ellison, Messrs. Watson, Dujardin, Lloyd, Parks, Sobey, Gill, H. Crowther, M. B. Lax, Gibson, Collins, Senior, Ostler, G. Thompson.

"A" Pilots.—Messrs. Thomson, Clayton, Ambler, Ellison, Wood, Birch, A. Crowther, H. Crowther, Humphries, R. K. Lax, Ostler.

Passengers, 15. This week we have been handicapped by only having SV serviceable, and by bad weather on about three days. We have been promised a visit by the Autogiro on Wednesday next, and no doubt many of our budding private owners will rush down to view the machine, which can be kept and flown from one's back garden.

FROM THE FLYING SCHOOLS

Henderson Flying School, Brooklands Aerodrome

REPORT for week ending August 3.—Total flying time, 54 hrs. 20 mins. Dual (with Col. G. L. P. Henderson): Messrs. Lewis, Du Cane, Moursi, Guinness, Elton, Austin, Matos, Billimoria, Daniels, Dr. Forsyth, Dr. Taylor, Groner, Daniell, Stewart, Robertson, Capt. Leigh, Miss Chapman, Mrs. Monkton; (with Capt. H. D. Davis): Messrs. Richardson, Hamilton, Oldmeadow, Davies, Groner, Lewis, Hill, Miss Welby, Mrs. Scott, Mrs. Monkton.

Solo: Messrs. Stewart, Oliver, Swan, Davies, Daniell, Hill, Guinness. Messrs. Groner, Davies, Guinness, and Daniels completed their first solos during the week.

REPORT for week ending August 9.—Total flying time, 36 hrs. 35 mins. Dual (with Lieut.-Col. G. L. P. Henderson): Messrs. Moursi, Robertson, Matos, Lewis, Daniels, Du Cane, Leigh, Stewart; (with Capt. H. D. Davis): Messrs. Robertson, Lewis, Matos, Daniels, Austin, Dr. Taylor, Davies, Oldmeadow, Billimoria, Hamilton, Lee, Mrs. Monkton, Miss Kidston.

Soloists.—Messrs. Guinness, Robertson, Daniels, Lee, Matos, Moursi, Du Cane, Davies.

Messrs. Matos, Guinness, Robertson and Moursi were launched on their first solos. Mr. T. T. Davies has now passed all his flying tests for his R.A.C. licence.

Mr. Robertson has made remarkable progress; he was sent solo after four clear flying days at the school, and is now ready to do his R.A.C. tests. Mr. Maddocks has taken delivery of his S.E.5, and spent most of Sunday in the air getting used to it.

Another School machine is almost ready, and the shops are working at full pressure reconditioning private machines.

Lieut.-Col. Henderson has taught Messrs. Anderson and Allen, our two chief Ground Engineers on the Maintenance Staff, to fly. Mr. Allen has completed all tests for his "B" licence, and Mr. Anderson is well on the way to do the same. This is the outcome of a definite policy laid down by the firm that all ground engineers must also be pilots. Considerable utility arises from the fact that all ground engineers are able to take spare parts by air in the event of a breakdown, while the machines are away, and could test them after carrying out rigging alterations, etc. It is considered that this move will promote general efficiency in a very practical manner.

OVERSEAS CLUBS

VICTORIA AERO CLUB, B.C.

REPORT for July 7 to 14.—On July 7 the Club's Honorary Instructor, Mr. Sydney Pickles, made a short flight accompanied by Mrs. Pickles. After this Mr. Pickles made a short solo flight, demonstrating the manoeuvring qualities of the machine, when he did several loops and spins, both to right and left. Then he took the Club's "Moth" up to an altitude of 15,000 ft. in 43 mins. This is believed to be the highest altitude yet reached over Victoria, B.C. At about 10,000 ft. another monoplane seaplane was passed, which was apparently taking photographs of Victoria and vicinity. The view at this

height was magnificent, Cape Flattery being very plainly seen as was the mouth of the Fraser River, about 60 miles away.

The machine was still climbing at 15,000 ft., but the pilot did not continue owing to not being properly attired for the freezing temperature. The Club Members, watching from the ground, completely lost sight of the machine with the naked eye, although it was a clear day. On July 8 Mr. A. W. Carter, the Club's President, was out taking some refresher duals and several solo flights, and put up a very good showing. Later, Dr. Nash, Mr. McGivern and Mr. Foster, were taken up as passengers by Mr. Pickles.

July 9 was an unfortunate day as the first damage to the machine occurred. Through an oversight, while running the engine, the machine fell forward on its nose, and damaged its propeller, thereby putting it out of commission, but fortunately the Club was able to get a spare propeller from Mr. Dobbin of the Dominion Airways, Limited, of Vancouver, and flying commenced again on July 10, when the following student members were given instruction. Messrs. F. F. Cooper, A. Nash, R. Hedley, L. S. Macleod, H. M. McGivern, and C. Aitken. These instructional flights taking 3 hours.

July 11, the following student members were given dual instruction by Mr. Pickles: Messrs. F. Cooper, E. Hanbury, L. S. Macleod, and C. Aitken. These flights taking 1 hour and 45 mins. July 12, Mr. Pickles took up the following student members for dual instruction: Messrs. F. Cooper, P. Foster, E. Hanbury, the flights taking 1 hour and 15 mins. After which Mr. A. W. Carter did some solo flying for 45 minutes. July 13, Mr. Pickles gave dual instruction to the following student members: Messrs. F. Cooper, H. M. McGivern, E. Hanbury, A. Nash, G. Burns, P. Foster, and F. Gilbert, the flights taking about 3 hours. July 14, the following student members were given dual instruction by Mr. Pickles: Messrs. C. Aitken, H. M. McGivern, E. Hopper, E. Hanbury, and F. S. Cooper, the flying time being 1 hour and 35 minutes.

Our next trouble occurred on this day, when a small part broke in the Impulse starter, causing other parts to become damaged, consequently putting the machine out of commission. We were again fortunate in being able to obtain another Impulse starter from Mr. Dobbin, of the Dominion Airways, Limited, Vancouver, B.C., so that flying should proceed without any delay.

WINNIPEG FLYING CLUB, MANITOBA, CANADA

REPORT for week ending July 1.—Flying time for the week was 34 hrs. 22 mins., making a total for the club of 139 hrs. 0-07 min. Of this week's time just about 24 hours was occupied with dual instruction, 8½ hours with members' solo, and 50 mins. with passenger flying.

Five members, club-trained *ab initio*, were sent solo, these being Miss Magill, Bradbrooke, Alleyn, Brookes and Haldane. Solo flying was also done by Crabbe, Huggard, Morgan, Partridge and Straith. Passenger flights were taken by three members, Mrs. Crabbe, Mrs. Straith, and Mrs. Parkhill.

Dual instruction was given to Alleyn, Antonbring, Bradbrooke, Barker, Barager, Brookes, Furnival, Grainger, Haldane, Longley, McFarlane, MacBean, MacDougall, Miss Magill, Nanton, Mrs. Oakes, Parkhill, Crosby, Patterson, and Thomas.

The engine of G-CAKB was given a top overhaul, having run up 155 hrs. in five weeks. The club's second "Moth," G-CAKU, was delivered, rigged and tested, so that two machines are now in regular use.

REPORT for week ending July 8.—A week of intermittent heavy rains kept down flying time for the two club machines, G-CAKB and G-CAKU, to 24 hrs. 43 mins. The total flights were 200, so that the club has to its credit in six weeks' operation 1,550 flights and about 164 flying hours.

M. de Blicquy put in 15 hrs. 53 mins. on dual instruction with the following members: Mrs. Oakes, Miss Bell, Messrs. Barker, Barager, Brookes, Beketov, Crosby, Cook, Furnival, George, Grainger, Gardner, Longley, MacFarlane, MacBean, MacDougall, Nanton, and Thomas.

Crosby and Barager did successful solos, the former doing his first flight alone and the latter his first solo with the club after a refresher course. Members who continued solo work were Alleyn, Bradbrooke, Barager, Brookes, Crosby, Huggard, Haldane, Partridge and Straith, the total time being 8 hrs. 20 mins.

Vice-President Phil Crabbe flew with M. Campbell, M.P., and Hon. W. R. Clubb as passengers.

From the air Stevenson Field appears the driest spot for miles, but the pools of water make landings somewhat difficult none the less. Students are profiting by the practice in mud-walloping, with no worse effects than copious splashing.

Report for week ending July 15.—Total flying time for the week was 54 hrs. 23 mins. This brings the grand total to 216 hrs. 40 mins. and the total number of flights to 1,924.

Dual instruction accounted for the large proportion of time, being 28 hrs. 22 mins. Students were Mrs. Oakes, Messrs. Antonbring, Barker, Beketov, Cockburn, Cook, Furnival, George, Grainger, Thomas, Parkhill, Gardner, Hitchen, MacBean, MacDougall, MacMillan, MacFarlane, Newart and Nanton.

Solo time was 18 hrs. 52 mins. with Miss Magill, Messrs. Alleyn, Bradbrooke, Brookes, Barager, Crosby, Crabbe, Haldane, Partridge, and Straith.

Passengers were flown for a total of 6½ hrs., as follows:—With Mr. de Blicquy, Mrs. George and Sqdn.-Leader Cowley. With Mr. Partridge: Messrs. Thomas, McBurney, Grant and Eby. With Mr. Straith: Mrs. Straith, Messrs. Cousins and Brookes. With Mr. Crabbe: Mrs. Crabbe.

A variety of incidents enlivened the week. Each machine stood on its nose in a soft spot, breaking the propeller of KU. Mr. Barager passed the flight tests for his commercial licence, and Mr. Bradbrooke the flight tests for his private licence. The examination was conducted by Sqdn.-Leader Cowley, who thought the latter was the first licence to be granted to a beginner in a flying club in Canada.

Mr. Crosby indulged his well-known propensity for tail-spinning by holding KB nose downwards for 17 turns.

Report for week ending July 22.—Flying time for the week on KB and KU was 52 hrs. 34 mins., the solo machine, KB, putting in almost exactly one-third of it. The total club time to date is 260 flying hours and 2,300 flights.

Dual instruction was given by M. de Blicquy for a total of 31 hrs. 43 mins. to Antonbring, Beketov, Barker, Cockburn, Crane, Cook, Furnival, Gardner, George, Ovas, Sutherland, Grainger, Hitchen, McMillan, McDougall, McBurney, MacFarlane, McBean, Newart, Nanton and Thomas.

Messrs. Nanton and Barker made successful first solos. Other solo work was done by Alleyn, Bradbrooke, Brookes, Barager, Barker, Crosby, Haldane, Miss Magill, Nanton, Partridge and Straith, for a total of 15 hrs. 13 mins.

Dr. Alleyn was examined for his private pilot's licence, Saturday, by Maj. L. F. Stevenson, R.C.A.F., and passed his flight tests successfully.

Passengers carried included Mrs. Nanton, with the instructor; Messrs. Kerr, Thomas, and Grant with Mr. Partridge.

Both machines put in a long week's work in perfect condition throughout. The only incidents out of the routine were a flight to 17,000 ft. by Bradbrooke in KU on Friday, and an exceedingly skilful landing by Brookes in KB when caught in stiff squall on Monday evening.

AIRISMS FROM THE FOUR WINDS

Great Flying-Boat Cruise

THE four R.A.F. Supermarine-Napier "Southampton" flying-boats engaged on the tour of Australia, left Farm Cove, Sydney, on August 11 for Brisbane.

Record Flight to the Cape

FLYING OFFICER P. MURDOCH reached Cape Town in his Avro "Avian" on August 12, fifteen days after leaving England. On the final stages he left Tabora on August 8, and reached Broken Hill. The following day he flew to Bulawayo, and then landed at Pretoria at midday on August 10, having flown the 7,000 miles from Lympe in 11½ days. He had a warm reception at the aerodrome, but was nominally put under arrest on a charge of over-staying his leave. He was reprimanded by General Brink, but granted an extension of leave, permitting him to continue the flight. On the resumption, he was forced down at Bredasdorp through shortage of petrol, and the machine was slightly damaged. On August 12 he reached Cape Town. He left again to attempt a return flight in ten days on August 14. The object is to prove that an England-South African air line can be flown all the year round.

Record for Australia

CAPTAIN KINGSFORD SMITH and Mr. C. Ulm, the Australian airmen who, with two Americans, recently crossed the Pacific in the "Southern Cross" monoplane, made a non-stop flight from Melbourne to Perth (Western Australia), on August 11-12, in the same machine. The distance of 1,950 miles was accomplished in 23 hrs. 24 mins., and the arrival at Perth was two hours ahead of the scheduled time. The reception committee were, consequently, not there to receive the airmen. A wireless operator and navigator accompanied them. After staying a week, they propose to fly back to Melbourne and prepare for a flight to New Zealand, which is expected at the end of August.

Italian Polar Expedition

THE Roman press has published some information of Gen. Nobile's interview with Mussolini concerning the disastrous North Pole airship expedition. Apparently, all the scientific observations made during the first flight of the "Italia" have been saved, and many notes of the second unfortunate flight as well. There are also many valuable scientific photographs, but the photograph showing the cross and tricolour being let fall upon the North Pole has been lost. Gen. Nobile said that the injuries to him and Cecioni perhaps saved the lives of the party, for had they all been capable of marching they would most certainly have set out as Dr. Malmgren and his comrades did, in which case wireless communication would not have been established. It is stated that Gen. Nobile is anxious to return to Spitzbergen to take part in the search for the remaining lost airmen.

French Aircraft for Afghan King

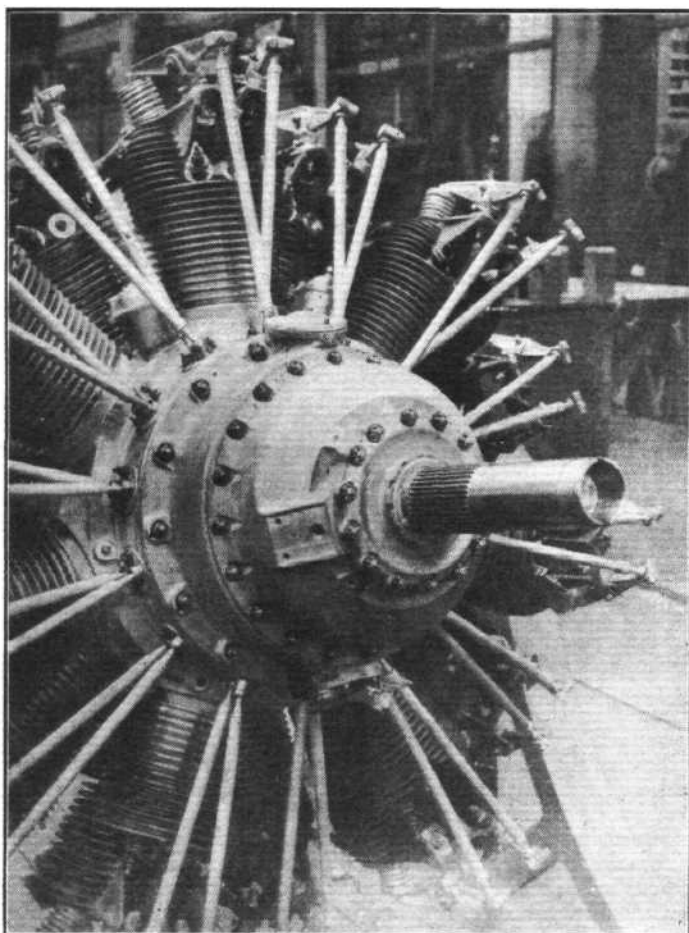
A POTEZ-LORRAINE 450 h.p. machine was ordered from France by the King of Afghanistan. Capt. Weiser left with it at 8 a.m., on August 10, accompanied by Sergt. Clement, to fly to Afghanistan in stages of 750 to 1,000 miles. After reaching Teheran he will fly across country never covered before by an aeroplane.

French Atlantic 'Plane Crashes

THE Couzinet three-engined monoplane called "Arc-en-Ciel" (Rainbow), which had been constructed in France for an attempt upon the Atlantic, crashed at Orly, near Paris, during a final test on August 8. The mechanic, M. Lanet, was killed instantly, and the pilot, Maurice Drouhin, died the following day from injuries. The other two members of the crew, M. Gianoli, engineer, and M. Manuel, wireless operator, are expected to recover. It is stated that recently the centre engine, which was 180 h.p. like the other two, was changed for one of 600 h.p., and when Drouhin was attempting a



A HANDLEY PAGE IN INDIA : These two views were taken at Arawali, a landing ground on the North-west Frontier of India, about 3,700 ft. above sea-level. They show a Handley Page "Hinaiidi," fitted with two Bristol "Jupiters" and (below) some of its crew with the armed native tribesmen who guard the aerodrome.



THE NEW ARMSTRONG-SIDDELEY "JAGUAR" REDUCTION GEAR : It will be seen from the accompanying photograph that the new reduction gear—which was described in our issue for July 26—makes but little difference in the bulk of the "Jaguar," as it does also in the weight. As regards the latter, it should be noted that the added weight is only 60 lbs—and NOT, as stated in our description referred to above, 100 lbs.

speed test, apparently wing flutter developed, and the crash followed. After the change of engine a previous test over Paris had been successful. Drouhin was a noted French pilot of long experience, and will be remembered in particular in this country for his proposal last year to fly Mr. Levine back to America in the monoplane "Miss Columbia." He made more than one record for his country. It is stated that the French Government has ordered another machine of the Couzinet type.

Gliding Records

A WORLD'S gliding record was claimed in the accomplishment of the Austrian pilot, Herr Kronfeld, who remained in the air for 3 hrs. and reached an altitude of 1,476 ft. during the annual Rhon contest near Kassel. The meeting opened on August 1, and over 80 gliders took part. Within four days 200 flights were made. Kronfeld's altitude was later beaten by Herr Dittmarr, of Schweinfurt, who, on an old machine, in a flight which finished 25 miles away, reached an altitude of 2,500 ft. Another competitor, Herr Nehring, glided 45 miles from the starting point.

Via Greenland

THE Danish Government has despatched an expedition to Greenland, to report on a suitable site for an aerodrome, as America expressed a desire for such facilities for future trans-Atlantic flying. It is stated that the aerodrome will be constructed at the Soenderstroem Fjord.

The Mail 'Plane

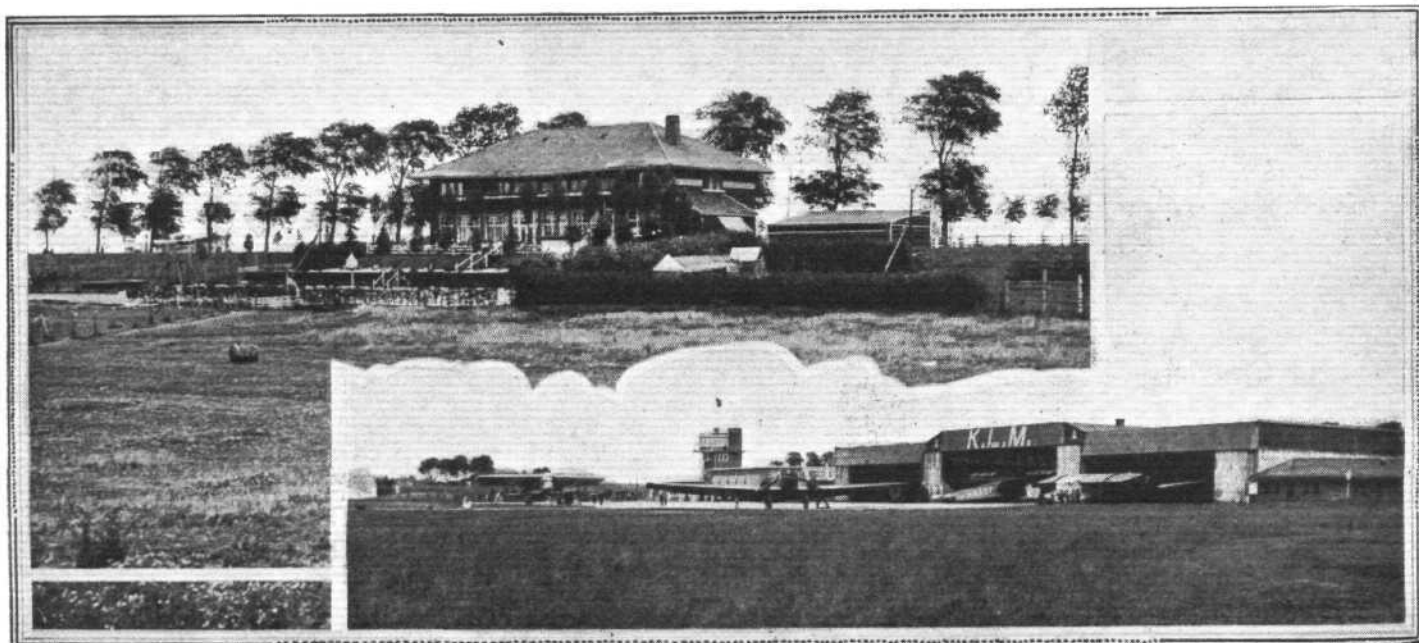
WHEN the liner *Ile de France* set out for New York last week from France, it carried a seaplane on board, which left the ship when near the American coast, and arrived a day ahead with mails. A similar saving of time will be effected on the eastward voyage, the plane flying directly from the incoming vessel to Paris. At present, the service only applies to mails specially marked and surcharged for transport by the air and sea service of the *Ile de France*, but it is hoped that it will be extended to other liners and that eventually passengers will be carried in the machine.

Courtney's Flying-Boat Found

THE Dornier-Wal flying-boat, from which Capt. Courtney and his passenger and crew were rescued in mid-Atlantic on August 2, has been found by the Italian cargo boat *Valprato* and taken to Sydney, Nova Scotia.

The "Friendship" Going Back

SHORTLY, the seaplane "Friendship," in which Miss Earhart, Comdr. Stultz and Mr. Gordon flew the Atlantic recently, is to be sent back to America, there to be re-conditioned for experimental work. It may take part in a non-stop race across America. It has been purchased for the Mechanical Science Corporation by Mr. D. Woodward, who has leased it to Rogers Air Lines.



["FLIGHT" Photographs

THE AMSTERDAM AIR TERMINUS : The lower photograph shows the hangars, offices, etc. at the Schiphol aerodrome. The international character of this Dutch airport may be gathered from the machines in front of the buildings, which include a Farman "Jabiru," a three-engined Junkers monoplane, a Fokker monoplane, and a Dornier monoplane. The upper photograph shows the aerodrome restaurant where excellent meals are served, and from which a good view of the aerodrome, machines, etc. is obtained.

AVIATION STRIDES IN CANADA

CANADIAN CIVIL AVIATION REPORT FOR 1927

ACCORDING to a Report on Civil Aviation and Civil Government Air Operations, recently issued by the Department of National Defence at Ottawa, remarkable strides were made by aviation in Canada during 1927. Though the Dominion and Provincial Governments increased their flying operations by 50 per cent., the most gratifying feature of the period under review was the fact that commercial flying companies more than doubled their flying time.

The Department points out that flying has now become a recognized part of practically every conservation, development and engineering service in the country.

A criterion of the growth of Canadian commercial flying is the statement that in 1927 the hours flown were 12,070 as compared with 5,860 in 1926, which is an increase of 106 per cent. Furthermore, the number of passengers carried by commercial planes advanced from 6,436 to 18,932, and the number of passenger miles from 631,715 in 1926 to 1,424,031 in 1927. Freight carried likewise shows a gratifying increase from 724,721 lbs. in 1926 to 1,098,346 lbs. last year.

A striking indication of the magnitude of the operations carried out for Federal Government Departments under the Directorate of Civil Government Air Operations is conveyed by the statement that in 1927 the flying totalled 2,028 hours.

Sixty-six per cent. of the time was devoted to patrol of forests against fire or other forestry operations, while 30 per cent. was taken up in photographic operations for topographical surveys.

Among the Provincial Government operations, those of Ontario were most important. The Ontario Government maintains its own air service and its operations included the sketching of 18,000 square miles of territory, while 4,572 square miles were photographed and 526 forest fires detected. In Quebec, companies operating under contract with the Provincial Government photographed an area of 5,800 square miles and carried out forest sketching over an area of 7,000 square miles. In British Columbia, forest sketching and aerial photography were also undertaken under contract. 12,400 square miles being photographed and 2,200 square miles being sketched. Fifty-nine forest fires were also detected from the air.

DUSTING FORESTS BY AIR

AEROPLANES, scientific workers and commercial organisations have combined their forces in an effort to find the best method to control the spruce bud worm in Canada. It is estimated that 200,000,000 cords of wood have been destroyed by this pest since 1909, which means a loss to the Dominion of \$2,000,000,000.

The work being done is purely investigational, and consists in the dusting from the air with different strengths of calcium arsenate of twelve 10-acre plots of different types of timber.

The bud worm principally affects the balsam, and the trees are dusted when the budworm is in the caterpillar stage. The caterpillar bores into the bud and feeds on the new foliage.

The experiments are being conducted near Westree on the Canadian National Railway west of Sudbury, Ontario. A "Keystone Puffer" aeroplane is used for the dusting. It is of the same type as those used for the cotton-dusting in the Southern States. The Dominion Air Service is supplying the 'plane; the Entomological Branch of the Dominion Department of Agriculture the scientific investigators; and the Ontario Forestry Branch and the Spanish River Pulp and Paper Company are lending their assistance and co-operation.

Last year some preliminary investigations were conducted, this year they are being continued in an effort to perfect

this method of control. If the dusting method of control can be effectively employed it will mean a tremendous economic saving to Canada.

VICTORIA AERO CLUB, BRITISH COLUMBIA

AFTER a long enforced period of delay, caused by difficulty in raising the \$4,000 guarantee bond required by the Dominion Government in respect of the first D.H. "Moth" loaned to the Victoria Aero Club, the Club has now actually commenced flying operations. This reflects great credit on the indefatigable honorary secretary and instructor, Mr. Sydney Pickles, A.F.R.Ae.S. The bond difficulty has been a very big one, and Mr. Pickles is being heartily congratulated on his success in arranging the guarantees. The following members of the Club have guaranteed the bond:—Messrs. D. W. Hanbury, V. H. S. MacLeod, R. H. B. Ker, A. W. Carter, L. de S. Duke, Sydney Pickles, H. M. McGiverin and Norman A. Yarrow.

On July 2, after the machine had been passed as air-worthy by the Club's Honorary Air Engineer, Mr. A. W. Carter, it was taken out for solo test flights by Mr. Sydney Pickles, who obtained his British certificate for flying sixteen years ago in July. Three test flights were made, during which various aerobatics were indulged in, such as looping, etc. The pilot reported the machine as handling beautifully. These were the first flights this machine made in Canada. Afterwards three members of the Club were taken up as passengers. Unfortunately, the Club's President, Mr. A. W. Carter, had to leave the Aerodrome and thereby missed having the honour of being the first passenger, which went to Mr. E. Hanbury, one of the directors. The other passengers were:—Mr. F. F. Cooper, and Mr. G. S. Burns.

The next morning the Club's President, who is also an experienced pilot, had two passenger flights and took some refresher dual.

On July 4, the D.H. "Moth" was out again under the pilotage of Mr. Sydney Pickles, who took up Capt. Awde and Messrs. Ernest Eve, Cecil Eve, G. S. Burns, L. de S. Duke, all of whom enjoyed their flights immensely. After lunch, Flight-Lieut. Hull, from the Vancouver R.C.A.F. Air Station, arrived in Victoria on an Avro seaplane and then motored to the aerodrome and did forty-five minutes' flying on the D.H. "Moth," this being his first experience on this particular machine. He was very favourably impressed by its performance.

On July 5, Mr. Pickles was out again, giving passenger flights to the following members:—Messrs. H. M. McGiverin, C. Aitken, E. Hanbury, D. W. Hanbury and G. S. Burns. Mr. D. W. Hanbury, who is 65 years of age, enjoyed this, his first flight, greatly. On one of the flights, the D.H. "Moth" reached an altitude of 5,000 ft., when the view of the Olympic Mountains, across the Straits of Juan de Fuca and the various islands, was most impressive.

At a directors' meeting, on July 5, the directors passed a resolution that the following persons be made honorary life active members of the Club, in return for financial assistance and services rendered in the formation of the Club:—Major-General MacBrien, the Hon. Walter C. Nichol, Messrs. D. W. Hanbury, V. S. Stewart MacLeod and Sydney Pickles. The resolution will be placed before the members of the Club at the next general meeting for their consideration.

The total membership of the Club is now 100, with 42 members wishing to undergo flying instruction, so the Club's next business will be to obtain further machines, which it hopes to manage before very long.

Herding Reindeer by Aeroplane

IN Alaska the herding of reindeer by air has been tried with success. Ralph Lomen, pioneer of the Alaskan reindeer industry, stated that recently their head herdsman went out in an aeroplane and accomplished as much in two hours as would otherwise have taken a week with six men.

Avro "Avians" in America

TWELVE Avro "Avian" light aeroplanes have been shipped to America, the last pair going on August 4. It is possible that others will be ordered before long. Air Associates Inc. of New York City are agents for these machines in Eastern America, and the Northrup Airplane Co. of Minneapolis have acquired two and are acting as agents in the

Western States. One of the pair has the Handley Page "Slots."

Detecting Criminals by Air

AN aeroplane equipped with a machine gun, and carrying armed detectives, covered a large area of Southern Manitoba in an endeavour to locate a motor car which was reported to have been seen with five armed bank bandits. The search was not successful.

Aircraft Carriers

ON August 8 the aircraft carrier *Argus*, Capt. C. St. C. Cameron, C.B.E., was due to complete refitting after its service in China. It is now transferred to the Atlantic Fleet.

ROYAL AIR FORCE

Changes in Higher Command

THE Air Ministry announces that on January 1 next Air Marshal Sir John Maitland Salmond, K.C.B., C.M.G., C.V.O., D.S.O., LL.D. (Camb.), A.D.C., will resign the command-in-chief of Air Defences of Great Britain and will be succeeded in that command by Air Vice-Marshal Sir Edward Leonard Ellington, K.C.B., C.M.G., C.B.E. Sir John Salmond will replace Air Vice-Marshal Sir Philip Woolcott Game, K.C.B., D.S.O., as Air Member of Council for Personnel.

These are changes of first-class importance, and they almost certainly indicate that an even more important change in the higher commands is soon to take place. Lately it has been persistently rumoured in well-informed circles that Marshal of the Royal Air Force Sir Hugh Montague Trenchard, Bart., G.C.B., D.S.O., D.C.L., LL.D., will soon resign his appointment of Chief of the Air Staff. Such a rumour has been current more than once in the last few years, but this time weight is lent to it by the change in the command-in-chief A.D.G.B. Second only to the position of Chief of the Air Staff, that command is the most important position in the Royal Air Force at home, and ranks even higher than the command of all the British forces in Iraq—though the Iraq command is inferior to no other in responsibility. To an officer who has held both those commands in turn, a comfortable seat on the Air Council cannot be regarded as promotion. In fact, it is hardly conceivable that Sir John Salmond's genius for command and organization should be allowed to rust in such an appointment unless it were regarded as a mere temporary measure from which Sir John can easily step into the supreme appointment of all in the service. Sir John Salmond, in fact, has long been regarded as the natural successor to Sir Hugh Trenchard whenever the latter should retire from his position as Chief of the Air Staff. A Marshal of the Royal Air Force is of corresponding rank to an Admiral of the Fleet and a Field Marshal, and therefore, presumably, never retires from the service, though he may remain unemployed.

Sir John Salmond is not only the second senior officer in the Royal Air Force, but is also the only officer who bears the rank of Air Marshal, which corresponds to Vice-Admiral and Lieutenant-General. At present no officer bears the rank of Air Chief Marshal.

Sir John Salmond's Brilliant Career

Sir John Salmond is a son of Major-General Sir William Salmond, K.C.B., and was born in 1881, being three years younger than his brother Geoffrey. The brothers were educated at the famous army school, Wellington, but then separated, John proceeding to the Royal Military College, Sandhurst, and Geoffrey to the Royal Military Academy, Woolwich. John was commissioned in the King's Own (Royal Lancaster Regiment) in 1901, while Geoffrey entered the Royal Artillery. However, the call of the air ultimately brought them together again in the same service. John served in the South African war, taking part in the operations in the Transvaal, and received the Queen's medal with three clasps.

In 1912 the future Air Marshal learnt to fly, receiving R.Ae.C. certificate No. 272. His brother took certificate No. 421 next year. On the outbreak of the Great War, Major J. M. Salmond took No. 3 Squadron, R.F.C., to France, and remained in command of it for about a year. It would be quite impossible to recount all his activities, but two incidents during the battle of Neuve Chapelle are typical of his conduct as a squadron leader. At 6 a.m. on the first day of the battle, No. 3 squadron was ordered to bomb some buildings in Fournes which were believed to house a German divisional H.Q. Bombing in those days was a rough-and-ready proceeding. Three machines carried out the raid, led by Capt. E. L. Conran, and Major Salmond took the observer's seat in the leading aeroplane. Three times did Conran and Salmond dive to within 100 ft. of the buildings before releasing their bombs, and the houses were duly set on fire. Two days later a Morane was being bombed up on the aerodrome of No. 3 squadron when a bomb exploded, killing 12 men and seriously wounding four. When the flames died down it was seen that all the bombs had not gone off. Major Salmond forbade anyone to go near the aeroplane that evening. Next morning it was found that all the live bombs had been removed and buried. Major Salmond had done this himself at daybreak.

At the battle of Loos in September, 1915, Salmond was a

Lieut.-Colonel commanding the 2nd Wing, R.F.C., which consisted of Nos. 1, 5, 6 and 7 squadrons. Before the Somme struggle in 1916 John Salmond was promoted to Brigadier-General and commanded the 2nd Brigade, R.F.C., composed of the 2nd and 11th Wings. In 1917 he became Major-General and for a short time was Director-General of Military Aeronautics with a seat on the Air Board. Before long, however, he was appointed General Officer Commanding the R.F.C. in France. He remained in command until some time after the Armistice. He returned home wearing the insignia of the Legion of Honour, the Order of Leopold of Belgium, the Crown of Italy, El Nahda of the Hedjaz, and the Belgian Croix de Guerre.

On his return home he was for a time A.O.C. Inland Area; but when Mr. Churchill decided to entrust the defence of Iraq to the Royal Air Force, and to place all British forces in the country under the command of the A.O.C., Sir John Salmond was chosen as the first officer to undertake that very important command. It was an experiment which marked a new era in the history of war and defence, and to initiate it successfully called for the highest qualities in the A.O.C. That Sir John was successful in his task is proved by the growing peacefulness and prosperity of Iraq, and the continuous reduction of the cost of its defence.

Having proved his ability to organise new and novel commands, Sir John was recalled to Great Britain in 1923 to initiate the new command of Air Defences of Great Britain, and at the same time was promoted to Air Marshal. His new appointment carried the title of Commander-in-Chief, which duly marked its supreme importance. It was not only important in itself, but it was significant. It emphasised that the Royal Air Force was no longer a mere union of the R.F.C. and the R.N.A.S., designed only to provide the Navy and the Army with air arms. Air Defence became a separate business, requiring a special Ministry and a special staff to study the conditions of an air campaign in which it might happen that neither Navy nor Army would be engaged. As such, it makes it certain that the Air Ministry and the R.A.F. must survive as a separate and absolutely essential entity even if in due course the Admiralty and the War Office are permitted to possess their own air arms which they, not unreasonably, desire to do. The one weak spot about the new command was that the R.A.F. did not, and does not, possess its own ground organisation of searchlights and anti-aircraft guns, which are certainly an essential element of Air Defence. In Iraq things are more logical, for there the R.A.F. maintains its own armoured car sections and does not borrow them from the Army. However, thanks to the exercise of tact, the Home arrangement has worked satisfactorily. The essence of air defence is attack. It is better to destroy the broods of hostile aircraft in their lairs and their nests rather than to wait until they are crossing our coasts. For this purpose the A.D.G.B. possesses the Wessex Bombing Area (sometime, no doubt, to be supplemented by the Mercian, Northumbrian and East Anglian Bombing Areas), and No. 1 Air Defence Group, the latter consisting of the bombing squadrons of the Special Reserve and Auxiliary Air Forces. It is, nevertheless, conceded that actual raiders must be dealt with, and for that purpose there exists the Fighting Area, the anti-aircraft units of the Territorial Army, and the corps of special constables who act as coast watchers and report the progress of raiding formations. Sir John has laid good foundations during the all-too-brief time in which he has been Commander-in-Chief.

Sir John married in 1913 Miss Helen Amy Lumsden, who died in 1916 during the thick of the struggle in France, leaving one daughter. In 1923 Sir John married the Hon. Monica Margaret Grenfell, daughter of the 1st Baron Desborough.

The New C.-in-C.

Air Vice-Marshal Sir Edward Ellington is a man not well known "in the street," but he has steadily increased his reputation in the service, and now he vacates the most important post overseas to take up the second most important post at home. Like Sir Geoffrey Salmond, he was originally a gunner. He took out No. 305 R.Ae.C. certificate in October, 1912, and it was in that year that one first heard of him as secretary to the War Office committee which was formed to deal with flying matters—a sort of precursor of the Air

Board. He held staff appointments in France from 1914 until 1917, when he was appointed Deputy-Director of Military Aeronautics at the War Office. In 1918 he became Director-General of Military Aeronautics, and shortly afterwards Controller-General of Equipment at the Air Ministry. Next year he joined the Air Council as Director-General of Supply and Research. So far his experience had been organisation rather than command. But in 1922 he entered on a new phase of his career, when he assumed command of the R.A.F. in the Middle East. Next year

he had the command in India, and in November, 1926, he became Air Officer Commanding all the British forces in Iraq. He has, therefore, held all the high R.A.F. commands overseas, and may thus be felt to have proved his worth as a leader. He assumes the command-in-chief at home at a critical time, when the foundations have been well and truly laid, but the building is far from completely erected. It is felt on all sides that no better man could have been found to succeed Sir John Salmond in this appointment.

F. A. DE V. R.

THE AIR MANŒUVRES

Great War Between Eastland and Westland

By MAJOR F. A. de V. ROBERTSON

THE air exercises carried out this summer by the Air Defences of Great Britain are on a greatly increased scale compared with those of last year. Many lessons were taught by the first experiment, and these are now being put into practice. Some of the main differences are:—(1) Greater latitude is allowed to the officers commanding the attack and the defence to match their wits against each other in the operation and control of their squadrons, the Commander-in-Chief, Air Vice-Marshal F. R. Scarlett, C.B., D.S.O. (who is officiating for Sir John Salmond) only retaining general control. (2) The No. 1 Air Defence Group, represented by one Special Reserve Squadron (No. 503 County of Lincoln B.S. under Wing/Commander the Hon. L. J. E. Twistleton-Wykeham-Fiennes) and three Auxiliary A.F. squadrons (Nos. 600 City of London B.S. under Sq./Ldr. F. E. Guest, C.B.E., D.S.O., 601 County of London B.S., under Sq./Ldr. Lord E. A. Grosvenor, and 605 County of Warwick B.S., under Sq.-Ldr. J. A. C. Wright) form part of the forces of the invading Eastland. (3) The system of coast watchers and observation posts has been elaborated. As the Post Office is not able to put telephone lines at the disposal of the observation posts and centres during the day time, the exercises are only carried out from 6 p.m. each evening to 9 a.m. the following morning.

These exercises are not intended to test the defence of London, which is still in a more or less rudimentary condition, but to test the efficiency of units and to teach lessons in co-ordination of air and ground defence, flying organization, spotting arrangements, fighting tactics, communication problems, and the organization of operations rooms.

Eastland Forces

In addition to the No. 1 Air Defence Group mentioned above, Air Vice-Marshal Sir John M. Steel has under his command five day-bombing squadrons, Nos. 39 (D.H.9.a, under Sq./Ldr. H. V. Champion de Crespigny, M.C., D.F.C., from Bircham Newton); 207 (Fairey III F, under W./Cmdr. J. R. Graham, M.C., D.F.C., from Eastchurch); 11 (Horsley, under Sq./Ldr. P. H. Cummings, D.F.C., from Netheravon); 12 (Fox, under Sq./Ldr. T. E. Salt, A.F.C., from Andover); 100 (less one flight) (Horsley, under W./Cmdr. L. T. N. Gould, M.C., operating from Andover). No. 101 B.S. is in process of being equipped with Sidestrans, and is not taking part in the exercises.

The Eastland forces also comprise four night-bombing squadrons, No. 9 (Virginia), under W./Cmdr. C. C. Durston, from Manston; No. 7 (Virginia), under W./Cmdr. C. F. A. Portal, D.S.O., M.C., from Worthy Down; No. 58 (Virginia), under W./Cmdr. E. W. Norton, D.S.C., from Worthy Down; and No. 99 (Hyderabad), under W./Cmdr. B. E. Smythies, D.F.C., from Upper Heyford.

Westland Forces

Air Vice-Marshal Sir Robert Brooke-Popham, K.C.B., C.M.G., D.S.O., A.F.C., has under his command 12 fighter squadrons:—

No. 29 (Siskin), North Weald	Sq./Ldr. M. L. Taylor, A.F.C.
" 56 "	Sq./Ldr. A. Lees.
" 19 " Duxford	Sq./Ldr. H. W. G. Jones, M.C.
" 111 " Hornchurch	Sq./Ldr. K. R. Park, M.C., D.F.C.



IN THE CAMP OF THE "ENEMY": "Fairey Foxes" of No. 12 Squadron warming up their engines at Andover, and, above, taking off in formation in the rain.



[“ FLIGHT ” Photograph]

“ Bombing-up ”: Aircraftmen mounting one of the bombs on a Fairey “ Fox.”

No. 23 (Gamecock), Kenley ..	Sq./Ldr. A. G. Jones-Williams, M.C.
.. 32 (Siskin), Kenley ..	Sq./Ldr. R. B. Mansell, O.B.E.
.. 3 (Woodcock), Biggin Hill ..	Sq./Ldr. E. D. Johnson, A.F.C.
.. 17 (Woodcock), Biggin Hill ..	Sq./Ldr. A. R. Arnold, D.S.C., D.F.C.
.. 1 (Siskin), Northolt ..	Sq./Ldr. E. O. Grenfell, M.C., D.F.C., A.F.C.
.. 41 ..	W./Cmdr. F. Sowrey, D.S.O., M.C., A.F.C.
.. 25 .. Hawkinge ..	Sq./Ldr. W. H. Park, M.C., D.F.C.
.. 43 .. Tangmere ..	Sq./Ldr. C. N. Lowe, M.C.

Some of these squadrons have moved to temporary war stations for these exercises.

The ground defences are:—1st A.A. S/L Bn., R.E.; Essex A.A., S/L Group; Surrey A.A., S/L Group; Kent and Middlesex A.A., S/L Group; 26th A.A., S/L Battalion; 27th A.A., S/L Battalion.

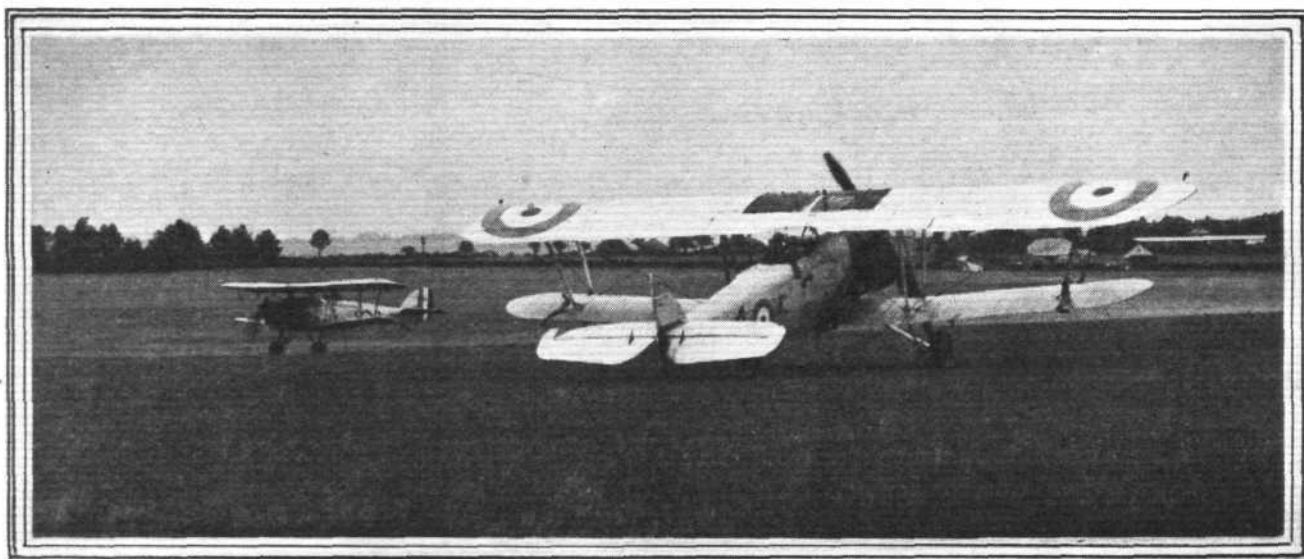
All raids have to commence by crossing the coast. At Hawkinge and Tangmere are Nos. 25 and 43 Fighter Squadrons, which will endeavour to intercept the raiders.

Along the coast are over 100 observation posts, manned by special constables, unpaid volunteers, who will try to spot the raiders by eyesight and by sound-locators. They will report to four observation centres, who, in turn, will pass the news on to the operations room of the Fighting Area. A certain belt outside London is covered by searchlights and anti-aircraft guns. The other ten Fighter Squadrons go up as ordered to meet the raiders, as the course of each raid is marked out clearly on the map in the operations room. A fighter squadron is expected to be in the air in formation within two minutes of receiving the order.

Monday, August 13.—Hostilities commenced at 6 p.m. on Monday, the 13th inst., but the bombers had to leave their aerodromes before, so as to be able to cross the coast at that hour. Naturally, the first raid started from Bircham Newton. At 5 p.m. I saw two flights of No. 100 B.S. take off from Andover. No actual bombs are carried during the raids, and the Horsleys were light. A very strong wind was blowing, and the Condors lifted the machines into the air with hardly any run at all. A quarter of an hour later No. 12 B.S. went off, all nine Foxes in formation. The objective given them was the Becton petrol depot near Woolwich. There is always much excitement when No. 12 B.S. is out on the raid. The speed of the Foxes, which can make 125 m.p.h. air speed when in formation, makes them very formidable enemies. Some authorities hold that it is the best tactics for very fast bombers to fly low, but on this occasion the Foxes climbed high. They believed that they found their target and bombed it unmolested, but on the other hand the operations room of the Fighting Area was full of information about their progress, and Sir R. Brooke-Popham was jubilant at the thought that some of his fighters had engaged them. He said that he looked on Horsleys and other bombers as easy game, as they were so much slower than the fighters, but to bring the Foxes to action was gratifying. At the moment of writing I have not heard what the umpires decided on this and other points.

A word should be said about the objectives given to the raiders. Sir John Steel, whom I met in the course of the day, said that he wished to make it very clear that he always gave objectives of definite military value, objectives which the artillery would like to hit if they could reach them. He said that a great deal of nonsense was talked about bombing residential areas and killing women and children. So it seems that the policy of “frightfulness” and “striking at nerve centres” which is so strongly advocated in some quarters has no official sanction from the command of the Wessex Bombing Area; and it is a very good thing to have this made so clear.

Though raids are ordered by the Headquarters of Eastland, a great deal is left to commanding officers. If the weather is considered too bad, a station commandant can cancel any raid. Once the formations are in the air, the Area H.Q. leaves them alone and sends them no orders unless it is urgently necessary to do so. For instance, if the aerodrome from which a bombing formation started becomes obscured by fog while the machines are in the air, a wireless order is sent to the bombers to land somewhere else. The leader of the raid is allowed to decide whether to proceed with the raid or to



[“ FLIGHT ” Photograph]

“ THEORETICAL ENEMIES ” LEAVING THEIR BASE: Two of the Hawker “ Horsleys ” of No. 100 Squadron leaving Andover on the first day of the Manœuvres preparatory to attacking London.

return. Only general instructions have been issued. The formation must be able to reach a reasonable height, and if the clouds prevent that, the raid is to be abandoned. The bombers, during these exercises, are allowed to make use of the clouds; but the fighters are not allowed to fly through them for fear of collisions. Cloudy weather, therefore, is in favour of the raiders.

Night raiding is carried out by single machines, not by formations. The night bombers must be able to cross the searchlight belt at a good height, and if they cannot do so, they must return. Within five miles of Charing Cross bombers must not fly lower than 4,000 ft. By night the fighters must show navigation lights, but the bombers only light theirs if they see fighters near them and think a collision possible.

During the daylight period on Monday the day bombers engaged in 10 raids, in which 70 bombing aircraft took part. To oppose them 72 fighters went up, and only one of the fighter squadrons failed to get in touch with any raider. All the other fighter squadrons were engaged. To the south-east of London No. 32 F.S. had six separate combats, while to the north-east, No. 29 F.S. was almost continuously engaged. The anti-aircraft guns claimed to have brought down eight raiders, but up to a late hour on Monday night the umpires had given no decision on the results of the raids and casualties.

Tuesday.—Last night the wind moderated and the weather improved and raiding went on merrily. It appeared this morning that the Foxes of No. 12 B.S. flew yesterday from Shoreham to their objective in East Ham in 28 mins. They lost one machine from A.A. fire but they dived through three layers of cloud and were not intercepted on their way in. On their return, however, two Foxes were shot down by fighters.

Early this morning Nos. 11, 12 and 100 crossed the Hampshire coast and attacked the R.A.F. Stores Depot at Kidbrooke and the Duke of York's H.Q. at Chelsea, while the County and

City of London B.S.'s. attacked Hornchurch and the Air Ministry. No. 39 B.S. attacked the Beckton petrol depot. The coast watchers did good work, and the Kent observers gave extremely accurate information of the progress of the raids. The three Auxiliary squadrons did distinctly good work.

At 6 p.m. I was at the Chelsea objective and saw a lot of raiding and fighting. No. 12 B.S. flew over at a great height, pursued by Siskins, which could not apparently catch the Foxes, but seemed to turn them away from us. We saw also the Horsleys of Nos. 11 and 100 B.S.'s. and suffered no harm from them. But disaster overtook us when eight D.H. 9a's of No. 39 B.S. came over at not more than 4,000 ft. with no fighters anywhere in sight. Their course was traced on the map in the camera obscura, and it was reckoned that the bombs (500 lbs. per machine) made direct hits on the main building. We also saw the Fairey 3 F.'s of No. 207 B.S., but they did not worry us. Then a flight of D.H. 9a's from one of the Auxiliary squadrons appeared, chased by two Siskins, which bore the red stripe of No. 41 F.S. The bombers banked and turned and one lost formation. A Siskin climbed above and dived on to it, and doubtless the evil career of that bomber was brought to an abrupt end. It was very interesting and exciting to watch.

Afterwards I went to Kenley aerodrome, where Nos. 23 and 32 F.S.'s live. I saw a flight of the latter go up after a night bomber. The fighters at night go up one machine at a time, with lights lit, and each works at a separate level.

Territorial search-light officers were there, tracing on a map the course of raiders across their sector and passing on the information to neighbouring sectors as well as to H.Q. Fighting Area. In the wireless room officers talked with the flight which was up in the air. The defence organisation is obviously growing in efficiency, and one can notice various improvements on last year. With more open sky visible this year the raiders are evidently finding their task far less simple, and they have already suffered heavy casualties.

OFFICIAL REPORTS

The following communiques were issued by the Air Ministry:—

Before giving details of the progress of the air exercises it is desired to point out that in Peace exercises aircraft are not shot down and umpires cannot decide which aeroplanes have been destroyed until afterwards. Further, bombers officially shot down continue on their courses to the target, and a deceptive impression of the effectiveness of the defence is created, unless the umpire's subsequent decision is taken into consideration.

For instance, during Monday afternoon's operation a squadron made three separate attacks by flights on Chelsea. Each flight was intercepted by overwhelming numbers of fighters. The squadron lost seven machines out of a total of nine. The remainder were driven off.

On the other hand, another squadron with very fast bombers made a successful raid and lost only one machine through A.A. fire. It took them only 28 minutes to come from Shoreham to their target in East Ham. They dived through three layers of clouds and were not intercepted on the way in. However, they were met by fighters and lost two machines on the way out. In spite of the clouds, the Observer Corps reported the daylight raids well. The Kent Observers were outstanding and gave very accurate information regarding the progress and position of bombers. The work of the three auxiliary squadrons was distinctly good.

During the night of August 13-14 28 raids were made by large bombers on various targets around London.

The Westland commander sent up fighters from Nos. 3, 17, 32, 23, and 111 Squadrons to intercept them.

The weather conditions in the neighbourhood of London were, on the whole, good, but deteriorated in the early hours of the morning. There was local cloud. The wind was from 15 to 45 m.p.h. from south-west. These conditions, on the whole, favoured the offensive, as the searchlights were frequently impeded by mist and cloud. Where the weather conditions permitted, the searchlights picked up the bombers promptly and held them well, enabling the fighters to attack them.

Twenty-two air combats took place, but the results are not yet available, and it is impossible to say at present how many raids were not intercepted, as certain of the raiders were attacked more than once.

During the early morning of August 14 the Eastland commander made another intensive attack on the London area. Nos. 11, 12, and 100 Squadrons crossed the Hampshire coast between six and seven o'clock to attack the Royal Air Force Stores Depot, Kidbrooke and Chelsea. The County and City of London Auxiliary Squadrons attacked Hornchurch and the Air Ministry. No. 39 attacked the Beckton Petrol Depot, crossing the coast at Harwich. No. 207 Squadron attacked Uxbridge, coming in via Southend.

The Westland Commander sent up the following eight Squadrons: Nos. 1, 19, 25, 29, 32, 41, 43 and 56.

Heavy fighting took place, but the full reports are not yet available. Some of the fighting took place at a height of 17,000 ft.

Later: The first phase of Tuesday's operations has now been completed. Reports were first received that raiders had crossed the coast at Shoreham, Ramsgate, Harwich and Sales Point between 18.00 and 18.10 hours. Nos. 43 and 32 Squadrons were at once ordered up to patrol South of London.

At 18.30 raiders were reported over Richmond, Croydon, Chelmsford, Burnham, North Weald and North of Biggin Hill and five further Fighter Squadrons were sent up to intercept them.

At 19.00 hours, two raids had reached their objectives in the London area and were returning towards the coast. Further raids were converging on London from Redhill, Kenley, Ramsgate, Herne Hill, Brentwood and Braintree, and there were eight Fighter Squadrons on patrol around London.

The ground observers were working exceptionally well and information on the progress of the raiders was coming in better than on the previous day.

At 19.30 hours all raiders had reached their objectives and were returning towards the coast. Combat reports had started to come in and it was clear that some of the raids must have been repelled by the fighters, but details

will not be available until some hours later, when the Umpires' reports have been received.

There has been heavy fighting in several places, particularly over the Croydon and Kenley areas. No. 25 Squadron intercepted three D.H.9 A's over Maidstone and claim to have shot them all down. Nos. 19 and 29 Squadrons met bombers from 207 Squadron.

The A.O.C. Westland Force was successful in intercepting a raid of Fairey Foxes from No. 12 Squadron on its return to the coast near Littlehampton, with No. 43 Squadron, but the Foxes proved too fast and no casualties to the former were claimed.

The fighters appear generally to have effected their interceptions sooner than yesterday evening, which resulted in less fighting over the centre of London, and the Umpires' report will probably show that more casualties were caused to the bombers on their inward journey before dropping their bombs. Last night many of the casualties were caused on the outward journey after the bombs had been dropped.

On Monday evening the Eastland commander concentrated his attacks so that the whole of his forces converged on London from all sides. These attacks were fairly successful because a considerable proportion of the squadrons coming from the south and west with a strong wind behind them and under the cover of clouds were able to evade the Westland fighters on the way in, but this success was qualified by very heavy losses on the way home.

Twenty-eight of the 70 bombers were shot down, including four by A.A. fire, whilst the Westland losses were 15 fighters.

During the night a steady stream of heavy bombers coming one at a time attacked selected targets. A good proportion of these raiders were picked up and held by the searchlights with the result that more were attacked on the way in than during the daylight period. As a result a smaller proportion of bombers penetrated the defence without being intercepted.

The losses were again heavy. 15 of the 29 raiders were brought down, including three by A.A. guns and only two of Westland fighters were lost.

The early morning raids of Tuesday, August 14, 1928, were on a similar scale to those of the previous evening. There was more cloud which hindered both sides. A larger proportion of the raiders were intercepted on the way in and consequently the bombing would have been less effective. 22 bombers were destroyed, including three by A.A. fire, whilst 15 fighters were destroyed.

Detailed results of the evening phase have not yet been diagnosed by the umpires.

On the night of August 14 four night bombing squadrons continued their attacks upon similar lines to those of the previous night. In all, 23 bombing aircraft took part. Rain and heavy cloud north and north-east of London interfered with the raids which were due to come in over Essex.

No. 9 Squadron delivered six attacks on Chelsea Barracks. All were well held by the searchlights and all except one were attacked before they reached their objective.

No. 7 Squadron attacked Croydon seven times. All except two were held by the searchlights from 2 to 10 mins., and all but two were attacked by fighters.

No. 58 Squadron attacked Wormwood Scrubs seven times. Five of these raids were held up by searchlights and only two escaped attack by fighters.

The weather during this period was very favourable for the searchlights, which was taken advantage of by the Territorial searchlights who again did excellent work.

Five squadrons were used by the defenders. Of these Nos. 23 and 32 Squadrons were most successful in intercepting the raiders.

Early in the morning of August 15 another concentrated attack was made on London. The weather was fine to the south but still bad to the north, with a strong wind from the south-west high up. Six bombing squadrons took part in the raids.

Between 7 and 7.30 there was a concentration of nearly 50 raiding aircraft over the London area.

Nine fighter squadrons were employed in the defence and very heavy fighting took place on the outskirts of London.

Nos. 1, 25, 29, 32, 43 and 56 Squadrons report having been in action, but no definite results can yet be given.

THE ROYAL AIR FORCE

London Gazette, August 7, 1928.

General Duties Branch

Squadron Leader F. J. Vincent, D.F.C., is granted a permanent commn. in this rank (Aug. 8). Lieut. J. M. Fearon (The Green Howards) is granted a temp. commn. as a Flying Officer on seconding for four years' duty with R.A.F. (July 14). The follg. Pilot Officers are promoted to rank of Flying Officer:—F. H. L. Searl (Jan. 14) (substituted for the notification in the Gazette of May 8); F. J. Taylor (July 4); W. G. H. Ewing (July 15). Pilot Officer U. H. Mignon resigns his short service commn. (July 30).

Stores Branch.

Flying Officer W. J. Eagle is transferred to Reserve, Class C (April 7) (substituted for Gazette, April 13).

Medical Branch.

Flight-Lieut. H. W. Corner, M.B., is granted a permanent commn. in this rank (Aug. 8). Capt. W. R. Wotton (Army Dental Corps) is granted a temp. commn. as a Flight-Lieut. (Dental) on attachment to R.A.F. (July 1). Flight-Lieut. (Hon. Sqdn. Ldr.) J. W. H. Steil, M.B., relinquishes his temp. commn. on completion of service, and is permitted to retain his rank (Aug. 1).

RESERVE OF AIR FORCE OFFICERS

General Duties Branch

J. F. Legard is granted a commn. in Class AA (ii) as Pilot Officer on probation; July 17. The undermentioned Flying Officers are promoted to the rank of Flight-Lieut. (July 31):—M. D. Barber, H. G. Travers, D.S.C., C. E. M. Pickthorn, M.C., A. M. Fitzrandolph, A. J. G. Anderson.

The undermentioned Pilot Officers on probation are confirmed in rank:—Class AA (ii).—A. M. Lester; July 28. T. P. Mulcahy; July 29. *Special Reserve*.—J. A. Hall, W. O'B. Knox, C. E. W. N. C. Pelly; June 1. J. F. R. Hunter; June 6.

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Wing Commanders: B. L. Huskisson, D.S.C., to C. and M. Party, Catterwater; 1.8.28. R. F. S. Morton, to R.A.F. M.T. Depot, Shrewsbury, pending taking over command; 14.8.28.

Flight Lieutenants: G. F. Smylie, D.S.C., to No. 1 Sch. of Tech. Training (Apprentices), Halton; 15.7.28. L. W. Jarvis, to H.Q., Halton; 26.7.28. S. D. Macdonald, D.F.C., to No. 24 Sqdn., Northolt; 8.8.28. F. H. Shales, to No. 22 Sqdn., Martlesham Heath; 8.8.28. C. E. W. Lockyer, to R.A.F. Cadet College, Cranwell; 20.8.28. F. E. Bond, to R.A.F. Depot, Uxbridge; 15.8.28. J. R. Wolley, to No. 2 Sqdn., Manston; 31.7.28.

Flying Officers: E. A. Healy, to R.A.F. Cadet College, Cranwell; 8.8.28. C. Guppy, to No. 2 Flying Training Sch., Digby; 8.8.28. P. P. Grey, to No. 5 Flying Training Sch., Sealand; 8.8.28. W. V. R. Nicholl, to No. 5 Flying Training Sch., Sealand; 8.8.28. J. F. Lawn, to No. 3 Flying Training Sch., Grantham; 8.8.28. J. R. Brown, D.F.C., to No. 9 Sqdn., Manston; 11.8.28. J. H. Pool, to Night Flying Flight, Biggin Hill; 24.7.28. A. A. Jones, to Elec. and Wireless Sch., Flowerdown; 14.8.28. S. G.

PERSONALS

Married

FLIGHT-LIEUT. B. E. EMBRY, A.F.C., R.A.F., younger son of the Rev. and Mrs. J. Embry, of Dover, was married on August 1, at the British Consulate and Embassy Church, Paris, to HOPE, younger daughter of the late CAPT. C. S. ELLIOT, R.N., and Mrs. Elliot, 24, Rue de Constantinople, Paris.

Death

FLIGHT-LIEUT. L. H. BROWNING, M.C., D.F.C., of No. 3 Fighter Squadron, R.A.F., who was killed on August 2, as the result of an accident whilst flying over the Holbeach ranges, in Lincolnshire, was the only son of Mr. and Mrs. B. P. Browning, of Old Court, Whitechurch, Ross-on-Wye, and was thirty years of age.

Royal Air Force Flying Accidents

The Air Ministry regrets to announce that as the result of an accident near Aden to a Fairey IIIF machine of No. 8 Bombing Squadron, Aden, on July 31, 248736 Sergeant Cecil Norman Morris, the pilot of the aircraft, was killed and the passenger, 3906145 Lance-Corporal, Acting Sergeant Gwilym Williams, 2nd Battalion, The South Wales Borderers, was slightly injured.

As the result of an accident at Holbeach Ranges, to a Woodcock machine of No. 3 (Fighter) Squadron, Sutton Bridge, on August 2, Flight-Lieutenant Lance Harold Browning, M.C., D.F.C., the pilot and sole occupant of the aircraft, was killed.

IMPORTS AND EXPORTS

AEROPLANES, airships, balloons and parts thereof (not shown separately before 1910).

For 1910 and 1911 figures see FLIGHT for January 25, 1912.

For 1912 and 1913, see FLIGHT for January 17, 1914.

For 1914, see FLIGHT for January 15, 1915, and so on yearly, the figures for 1927 being given in FLIGHT, January 19, 1928.

	Imports.		Exports.		Re-Exports.	
	1927.	1928.	1927.	1928.	1927.	1928.
Jan. ..	1,850	1,220	49,021	157,598	—	330
Feb. ..	679	1,772	63,080	118,622	—	345
Mar. ..	7,087	4,805	106,478	125,901	2,270	1,307
April ..	822	2,904	71,190	134,126	785	3
May ..	1,258	2,513	82,708	118,804	640	640
June ..	1,249	5,916	149,907	86,245	162	1,317
July ..	1,798	2,025	104,167	108,746	750	521
	14,743	21,155	626,551	850,042	4,607	4,463

Flying Officer G. C. W. Dufty is transferred from Class A to Class C; Dec. 5, 1927. Flight-Lieut. C. H. N. Nunn is transferred from Class B to Class C; Aug. 1. Flying Officer C. H. E. Coles relinquishes his commn. on completion of service; June 15.

The follg. are granted commns. in Class A.A. (ii) as Pilot Officers on probation:—L. L. J. Davies, G. D. Emms, E. J. B. Langhorne, S. M. Thompson, T. D. Trouncer (July 23); G. G. W. Farquharson (July 24); H. Clive-Smith (July 25); D. L. Hodge (July 26). F. C. Bridle is granted a commn. in Class C as Flying Officer (Aug. 7).

Flying Officer R. B. Tapp is transferred from Class A to Class C (Aug. 8). Flying Officer B. A. Davy resigns his commn. (Jan. 24) (substituted for Gazette March 20).

Stores Branch

The undermentioned are transferred from Class B to Class C; Aug. 1:—Sqdn.-Ldr. A. Burtenshaw, O.B.E., M.C., Flight-Lieut. A. E. M. Dredge, M.B.E.

AUXILIARY AIR FORCE

General Duties Branch

No. 601 (County of London) (Bombing) Squadron. The undermentioned to be Pilot Officer:—W. E. Windham; June 25.

No. 601 (County of London) (Bombing) Squadron. The follg. Pilot Officer to be Flying Officer:—A. G. Haward (July 25).

No. 603 (City of Edinburgh) (Bombing) Squadron. The follg. to be Pilot Officer:—J. E. Glenny (July 11).

No. 605 (County of Warwick) (Bombing) Squadron. The follg. to be Pilot Officer:—G. H. Aldridge (July 17).

Chaplains' Branch

No. 605 (County of Warwick) (Bombing) Squadron. The undermentioned to be Chaplain with the relative rank of Sqdn.-Ldr.:—The Rev. H. N. Forbes, M.A.; June 1.

Connolly, to H.M.S. *Argus*; 1.8.28. P. Jones, to Sch. of Naval Co-operation, Lee-on-Solent; 8.8.28. B. W. Barton, to No. 441 Flight; 25.6.28. A. R. Ward, to No. 441 Flight; 22.6.28.

Pilot Officers: M. Lowe, to R.A.F. Cadet College, Cranwell; 8.8.28. A. P. Miller, to No. 9 Sqdn., Manston; 17.8.28. V. S. W. Smyth, to No. 12 Sqdn., Andover; 17.8.28.

Stores Branch

Flight Lieutenants: W. J. Cleasby, to R.A.F. Station, Upper Heyford; 1.8.28. L. T. Sanderson, D.S.M., to Home Aircraft Depot, Henlow; 30.7.28. *Flying Officers*: D. A. W. Sugden, to R.A.F. Depot, Uxbridge; 2.8.28. G. G. C. Pigott, to Elec. and Wireless Sch., Flowerdown; 13.8.28.

Accountant Branch

Flying Officer H. S. Withers to R.A.F. Station, Duxford; 17.8.28.

NAVAL APPOINTMENTS

The following appointments were made by the Admiralty on August 11:—*Lieutenants* (Flying Officers, R.A.F.): D. J. Margetts, to *Courageous*; July 10. J. F. M. Robertson, to *Columbine*; Aug. 3.

NEW COMPANY REGISTERED

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AERONAUTICAL PATENT SPECIFICATIONS

(Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.)

APPLIED FOR IN 1927

Published August 16, 1928

- 1,923. A. BENUZZI. Variable-pitch screw propeller. (264,870.)
- 13,266. B. HINKLER. Undercarriage for aircraft. (294,319.)
- 16,577. BOUTLON & PAUL, LTD., and J. D. NORTH. Tanks. (294,353.)
- 17,843. SOC. ANON. BELGE DE CONSTRUCTIONS AERONAUTIQUES, and R. DE GLYMES. Speed indicators for aircraft. (274,082.)
- 24,762. H. R. MCCLINTOCK. Parachute packs. (279,408.)

SECRET PATENT RE-ASSIGNED TO THE INVENTOR

APPLIED FOR IN 1925

Published August 16, 1928

- 32,141. B. C. CARTER. Apparatus for burning liquid or gaseous fuel and the application thereof to i.c. turbines, turbo-air screws, projectiles, etc. (293,594.)

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